

# The Mining Journal.

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1530.—Vol. XXXIV.

LONDON, SATURDAY, DECEMBER 17, 1864.

(STAMPED.....SIXPENCE.  
UNSTAMPED.....FIVEPENCE)

### MR. JAMES CROFTS, SHAREBROKER, No. 1, FINCH LANE, CORNHILL.

(Established 22 years.)  
Mr. Crofts transacts business in the way of PURCHASE or SALE, in every description of stocks, but particularly in BRITISH MINES, in no case departing from the position of a broker, at net prices.

Holders of mining shares DIFFICULT OF SALE in the OPEN MARKET may find purchasers by negotiation through Mr. Crofts' agency. Also parties requiring ADVISE how to act as to the DISPOSAL, or ABANDONMENT, of doubtful mining stocks may profitably avail of Mr. Crofts' long experience on the market in all cases of doubt or difficulty.

\* ORDERS to buy or sell RAILWAY, BANK, and WATER COMPANIES' shares promptly carried out, for cash.

FOR SALE, AT LOWEST MARKET PRICES (net).—15 Mandlin, £2; 15 Crane, £2½; 40 South Darwen, 3s. 6d.; 1 East Basset, £20½; 40 North Chiverton, 2½; 20 Frank Mills, £2½ (samples of ore increasing); 25 Wheel Chiverton, £2½; 20 East Russell, £2½ (call paid); 25 East Vor, £2½; 20 Crebor, 4s.; 100 North Jane (an offer); 250 Vale of Towry, 4s. 3d.; 25 Grenville, £4½; 20 Lady Bertha, 21s. 6d.; 20 East Grenville, £4½; 20 East Laxey, £1½.

\* BUYER of Port Phillip, Yudanumutana, and Midland Railway. See reports of North Chiverton and Lady Bertha, in this Journal.

### MR. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.

JAMES LANE has FOR SALE at net prices:—5 Basset and Grylls; 3 Buller, £11½; 50 Bedol-Aur, 9s. 6d.; 20 Bryntail, £23½; 50 Crebor, 4s.; 20 Grenver and Abraham, 1s.; 50 Calstock Consols, 8s.; 20 Carn Camborne, 2s. 6d.; 10 Central Miners, 3s. 6d.; 20 East Lovell, £15½; 20 East Rosewarne, £3; 20 East Russell, £2½; 40 East Seton, 2s. 6d.; 10 East Chiverton, 30s.; 25 Great Wheel Busy, £2½; 20 Hallenbeagle, £2½; 20 Lady Bertha, £1; 20 Mandlin, £2; 20 North Trekerby, £2½; 6 North Basset, 27s. 6d.; 10 North Gumbrell, £2½; 50 North Devon, £2½; 50 New Wheel Martha, 7s. 6d.; 100 Okei Tor, 14s.; 50 South Grenville, 9s.

MR. WILLIAM LELAND BUYS and SELLS all descriptions of ENGLISH and FOREIGN STOCKS and SHARES, INSPECTS MINES, and TRANSACTS all the usual BUSINESS of a STOCK and SHAREDEALER. Parties may rely upon him for sound advice and punctuality in all his engagements.

Mr. LELAND has FOR SALE:—20 Mandlin, 9 Great Laxey, 2 Providence, 20 Bedford United, 20 Grenver Wheel Abraham, 2 St. Ives Consols, 2 West Wheel Seton, 20 North Trekerby, 20 North Chiverton, 10 South Wheel Basset, 10 South Darwen, 75 West Wheel Jane, 20 East Rosewarne, 10 North Croft, 20 East Laxey, 50 Great South Chiverton, 10 Boscawell, 10 East Trekerby, 10 Trelyon Consols, 50 Rosewarne Consols, 60 North Great Work, 70 Wheel Emma, 25 Trimley Hall, 100 Vale of Towry, 100 Hawkmoor, 20 Crane, 100 Wheel Curtis, 10 East Carn Brea, 200 North Jane, 100 Great Caradon, 10 Sthney and Carmichael, 20 East Chiverton, 5 Darren, 25 East Providence, £2½; 250 North Miners, 2s. 6d.; 1 Levant, and 1 Botalack.

I refer my correspondents to my letter in this day's Journal, page 876.

Bankers: Messrs. Roberts, Lubbock, and Co.

Offices, 11, Royal Exchange, London, E.C.

### JOHN B. REYNOLDS, 2, HATTON COURT, THREADNEEDLE STREET, LONDON, E.C.

Recommends for investment East Wheel Vor, Cook's Kitchen, and Stray Park shares, with several others, many of which are not now dealt in, but which have been very often in great demand, and which will be in considerable request again.

### WILLIAM WARD, 29, THREADNEEDLE STREET, LONDON, E.C.

WILLIAM WARD, 9, BROAD STREET BUILDINGS, LONDON, begs to inform the shareholders in the FOLLOWING MINES that he has been APPOINTED SECRETARY, and all communications are to be addressed as above:—

NORTH DOWNS.  
DALE (LIMITED).  
TREWELFA.  
GRAND DUCHY OF BADEN.

### MR. T. ROSEWARNE, 81, OLD BROAD STREET, LONDON, E.C.

MR. T. ROSEWARNE has FOR SALE:—  
Birch Tor & Vifler, £2.  
Bedford United, £2½.  
Buller, £11.  
Chiverton, £2½.  
Camborne Vean, £2½.  
Clifford Amalgamated, £2½.  
Chiverton Moor, £2½.  
Crenver Abraham, £2½.  
East Basset, £4½.  
East Carn Brea, £2½.  
East Russell (call paid), £2½.  
And is BUYER of:—  
West Caradon, £7.  
Wheel Edward, £7.  
T. ROSEWARNE is a SELLER of the following shares, for time on, at prices below present market value:—  
Glasgow Caradon.  
West Chiverton.  
December 16, 1864.

And is BUYER of:—  
West Caradon, £7.  
Wheel Edward, £7.  
T. ROSEWARNE is a SELLER of the following shares, for time on, at prices below present market value:—  
Glasgow Caradon.  
West Chiverton.  
December 16, 1864.

JAMES HUME, 74, OLD BROAD STREET, LONDON, E.C., AND MINING EXCHANGE, HAS BUSINESS in South Darwen, 2s.; East Grenville, £5; East Lovell, £15½; East Caradon, £19; East Carn Brea, £2½; Union, 10s.; East Russell, £5; North Shepherds, £3; Great Vor, £26½. J. Hume's "Circular" for November is now ready, and contains most valuable information on some of the leading mines likely to have a great rise. Subscription 6s. per annum. 6d. per copy.

Business transacted at lowest net prices.  
Bankers: London Joint-Stock Bank.

MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C., is in a position to give sound advice as to the sale or purchase of mining shares, the present being one of the most favourable opportunities for speculation or investment to result in large profits. List free on application.

FOR SALE:—2 East Basset, £20; 20 South Darwen, 3s. 6d.; 15 North Chiverton, £2½; 25 East Wheel Vor, £2½; 10 Wheel Grenville, £4½. BUYER of Chiverton, East Wheel Russell, and Central Miners. State number and lowest price.

### GEORGE RICE, 5, COWPER'S COURT, BIRCHIN LANE, LONDON, E.C. (22 years' experience), Member of the Mining Exchange, has SPECIAL BUSINESS, as BUYER or SELLER, in the following:—

Closing quotations.  
Birch Tor (New) ..... £1½-1½  
Clifford Amalgamated ..... 31-31½  
Chiverton ..... 6-6½  
East Russell (call paid) ..... 4½-5  
East Carn Brea ..... 6½-6½  
East Caradon ..... 19½-19½  
East Wheel Lovell ..... 14½-14½  
East Wheel Vor ..... 2-2½  
East Wheel Grenville ..... 4½-4½

BUYER for cash of Great Devon (Colcharton), 37s. 6d. paid; East Wheel Lovell, Marke Valley, and Great Vor.

Geo. Rice does not publish his opinions, and is therefore free to give his independent advice, as to what shares should be bought or sold, to all who may require it. My friends can now test the soundness of my advice during the present year.

Money advanced on mining shares.  
Bankers: Bank of London.

### MR. WALTER TREGELLAS, 3, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C., has BUSINESS in the FOLLOWING MINES:—Santa Barbara, Frontino and Bolivia Gold, Great Wheel Vor, North Shepherds, East Caradon, and North Roak.

W. TREGELLAS strongly recommends the above mines for immediate purchase, as these shares will pay good interest for money at present quotations.

MR. GEORGE BUDGE, SHAREDEALER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 17 years), has FOR SALE at net prices:—2 Miners, £302½; 10 East Caradon, £19½; 50 Mandlin, £2; 150 Santa Barbara, 9s. 6d.; 20 Trencrom, £2; 100 Welsh Gold, 1s.; 70 Frontino and Bolivia, 3s. 6d.; 2 East Basset, £20; 1 Wheel Seton; 10 Basset and Grylls, £11½; 100 Hawkmoor, 3s.; 50 Kelly Bray; 500 Great Northern, 1s.; 125 Anglo-Brazilian, 6s. 9d.; 50 North Devon; 60 New Martha, £1½; 150 Merilyn, 3s.; 60 North Down; 50 Vale of Towry, 4s. 6d.; 200 Molland, 3s.; 35 East Grenville, £4½; 150 Don Pedro, 150 Nova Scotia; 65 East Devon Consols, 17s. 6d.; 300 Rosa Grande, 3s. 6d.; 2 West Sharp Tor; 150 East Seton, 5s.; 150 Pedu-an-drea; 50 Tolcarne; 50 Port Phillip; 60 East Vor; 45 Sthney Metal, 32s. 6d.; 65 Great Retailack, 1s. 9d.; 70 Dale, 10s. 6d.; 10 Wentworth; 100 Redmoor; 30 Rosewarne United; 150 Cambrian Gold; 50 Wheel Hope; 40 North France, 3s.; 75 Trelawny; 2 South Croft; 100 Gawton.

### STOCK AND SHAREDEALER.—MR. PETER WATSON, ENGLISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES, 79, OLD BROAD-STREET, LONDON, E.C.

Twenty years' experience.  
(Two in Cornwall and Eighteen in London.)

Bankers: The Union Bank of London, and the Alliance Bank.

Every information can be obtained on personal application, or by letter, as to purchases and sales of Mine, Railway, Bank, and other Shares and Stocks, and the best investment for capital.

From the close proximity of his offices to the Stock Exchange, as well as the Mining Exchange, Peter Watson is enabled to act with promptitude on all orders entrusted to him, which at all times are carried out with punctuality.

INVESTMENT FOR CAPITAL.—For a good investment and a great rise in the present price of shares, Mr. Peter Watson is prepared to recommend four mines, which are paying good dividends (every two months or quarterly), and eight progressive mines, requiring but a further small outlay, which, from the present position and future excellent prospects, he feels confidence in recommending at the present greatly depressed prices. The above selection of twelve mines present more than the usual chances of success during the next twelve months. This list will be sent on application to all those who desire it, with the respectful solicitation that investors do their business through Peter Watson, 79, Old Broad-street, London, E.C.

EAST WHEEL VOR.—In my "Weekly Circular," No. 343, of Oct. 7, I stated:—"I should recommend my friends to increase their holding at present prices, 8½d. to 8½d.," and in my "Circular," No. 344, of Oct. 14 (four weeks ago) I stated:—"The shares this week have been firm at 8½d. to 8½d., and will, in my opinion, advance considerably," and this week they have advanced to 10½d. to 10½d. Those who acted upon my advice can now realise a great profit if they so desire.

PETER WATSON'S WEEKLY MINING CIRCULAR AND SHARE LIST, published every Friday, price 6d. each copy, forwarded on application. This Circular contains weekly important information with respect to all the principal Dividend and Progressive Mines in Devon and Cornwall.

EAST WHEEL VOR.—The Truro Correspondent of the MINING JOURNAL (in the Journal of Nov. 26) in remarking on the district, gives the following extract:—

"The most important virgin ground in the district is the large set (formerly two sets) now working as East Wheel Vor, comprising nearly the whole of the eastern half of the basin, and occupying precisely the same position, with regard to the granite hill bounding that side, as Great Wheel Vor does to the Trengonny granite. It includes all the lodes of Old Wheel Vor, as well as those of Wheel Metal, and the result of the sound and vigorous working it is now receiving is to be looked for with great interest. This set has, no doubt, been scratched about and played with for a long time—indeed, in fact, as Wheel Metal was until within the last four years—but it has never yet received such handling as could, except by an extraordinary accident, be expected to lead to any useful result. It now, however, seems to be provided not only with a good plant of material, but with an ample paid-up capital; and certainly its chances at the present moment are infinitely better than those of Wheel Metal four years ago. If the analogous geological conditions under which the same lodes occur on both sides of the basin forming the Wheel Vor district should lead, as may certainly be fairly expected, to anything like analogous results, then indeed East Vor, containing, as it does, the eastern continuation of the best known productive lodes of the district, has a future before it not easily to be matched. It is to such mines as these—virgin ground well situated—that, in the best interest of Cornwall, the capital and energy of legitimate mining enterprise should be directed. The public cannot go very far wrong in them, for although, of course, they cannot all succeed, yet a sufficient number to give a splendid result, on the whole, have never yet failed to do so."

The shares this week have been in good demand at 10½d. to 10½d., and when these shares advance to 10s. or 10s. each, probably say will be eagerly sought after by the investing public. Head agent's report upon the Mining Correspondence.

79, Old Broad-street, London, E.C.

### JAMES HERRON has FOR SALE the following SHARES, at the prices quoted, and FREE OF COMMISSION:—

100 Anglo-Brazilian, 5s. 3d.  
20 Bedford United.  
30 Bedol-Aur.  
20 North Hill, 2s.  
5 Bryn Gwlog.  
10 Bryntail, £2 10s.  
5 Buller.  
5 Clifford Amalg., £23½.  
1 Cargoll, £27½.  
30 Cwmaynlog, 1s. 9d.  
2 Cwm Erwin, £23½.  
20 Carn Camborne, £2 9s. 9d.  
20 Chiverton Moor, £2½.  
2 Cook's Kitchen.  
20 Central Miners.  
35 Cape Copper.  
5 Cobbe, £27½.  
5 Chiverton, £2 3s. 9d.  
20 Crenver Abraham.  
20 Carn Brea, £2 8s. 9d.  
10 Cliffla & Went, £2½.  
50 Drake Wall, 14s. 9d.  
1 East Basset, £20.  
1 East Carn Brea, £20½.  
5 East Russell, £25 2s.  
15 East Lovell, £15.  
10 E. Rosewarne, £2 16s. 9d.  
10 East Vor, £2½.  
15 East Grenville, £4 8s. 9d.  
50 East Laxey.  
5 East Caradon, £19 13s. 9d.  
50 East Clough, 2s. 6d.  
25 Frank Mills, £2 3s. 9d.  
20 Frontino and Bolivia.  
20 Great St. Toigals, 31s. 6d.  
50 St. Northern Copper, 1s. (call paid).  
50 Great Retailack, 2s.  
2, Adam's-court, Old Broad-street, December 16, 1864.

### MR. EDWARD COOKE, MINING SHAREDEALER, 2, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.

MR. EDWARD COOKE has removed to the above address, where all communications on matters relating to business will meet with his usual attention.

Dec. 16, 1864. Bankers: Alliance Bank, Lothbury.

OTEA COPPER MINE.—MR. EDWARD COOKE has much pleasure in drawing attention to this valuable property. There has already been sold from it about £30,000 worth of ore, with the aid of only very rude and inefficient machinery. A powerful engine and crusher were sent out to the mine some months ago, from which, and other steps taken by the present company, the costs of returning the ore (of which it is estimated that there are still 4000 tons of full 15 per cent. produce above the adit alone, besides a large quantity available under adit, though yet sunk only 20 fms.) will be reduced by as much as £4 per ton, while the position of the mine, on the coast, prevents it from being burdened with the usual heavy land carriage, and the freight to England in the wool ships is nearly nominal. From the reports of first-rate agents and the evidence of the mine, and it is likely to become a great mine. It is understood that the company intend to limit the operations for a time to returning a portion of the large quantity of ore laid open, thus probably securing a large profit in a short time, a part of which might be applicable to dividend, and the rest for further development. He feels confident in recommending the shares at present as a cheap investment, and as a limited number can now be procured, Mr. Cooke will be happy to receive orders for the same.

Full printed particulars can be obtained from Mr. E. Cooke, Stock and Sharedealer, 2, Crown Chambers, Threadneedle-street, London.

### MR. C. POWELL, MINE SHAREDEALER, 78, OLD BROAD STREET, LONDON, E.C.

MR. POWELL begs to inform his friends and the public that he continues to TRANSACT BUSINESS, as BUYER or SELLER of SHARES in MINES, at close net prices, either for cash or the fortnightly settlement.

The following shares are recommended for immediate purchase:—Bilins, Bryn Gwlog, Clifford Amalgamated, Chiverton, Chiverton Moor, East Carn Brea, East Wheel Vor, East Wheel Lovell, Frontino and Bolivia, Great Laxey, Great Wheel Vor, Hallenbeagle, Nanglies, New Wheel Lovell, North Chiverton North Wheel Croft, Sthney Wheel Metal, Santa Barbara, South Darwen, South Lovell, Tincroft, West Chiverton, West Wheel Vor, Wheel Basset, Wheel Kitty (St. Agnes), and Wheel Seton.

Dec. 16, 1864. Bankers: City Bank, Finch-lane.

### JOHN RISLEY, 32, LOMBARD STREET, LONDON, E.C.

SHARES IN MINES BOUGHT and SOLD on commission, at 1¼ per cent., for immediate cash. Bankers: London and Westminster, Lothbury.

### MR. T. P. THOMAS, GENERAL SHAREBROKER, AND AUCTIONEER FOR THE SALE OF MINING, RAILWAY, AND OTHER SHARES, STOCKS, BONDS, DEBENTURES, And all descriptions of Public Securities.

No. 6, NEW BROAD STREET, LONDON, E.C.

Shares bought and sold on the usual commission.

Terms for sale of shares by auction furnished on application.

### MR. T. E. W. THOMAS, MINING AGENT AND GENERAL MINING SHAREDEALER, 37, OLD BROAD STREET, LONDON, E.C.

MR. FRANCIS G. LANE, No. 2, ROYAL EXCHANGE, LONDON, E.C., has the following SHARES FOR SALE, free of commission:—

50 West Maria and Fortes-  
cuse, £2 1s.  
10 Wh. Kitty (St. Agnes),  
£5 6s. 3d.  
100 Prince of Wales, 2s. 3d.  
50 N. Wh. Martha, 2s. 6d.  
50 Vale of Towry, 4s. 3d.  
20 North Miners, 2s. 9d.

5 East Basset, £49½.  
50 Wheel Crebor, 41s. 6d.  
20 East Carn Brea, £26 16s.  
50 Wheel Hartley, 4s.  
50 So. Condurrow, 31s. 3d.  
50 St. Just United, 25s.  
50 St. Day United, 22s.  
20 East Rosewarne, £23½.

25 Hington Down, £4 13s.  
40 Lady Bertha, 19s. 6d.  
20 Grylls Wheel Florence,  
£2.  
100 Wheel Pollard, 8d.  
5 Bryn Gwlog, £20½.  
25 Torbay Hematite Iron,  
£4½.

BUYER of Marke Valley, £5; East Caradon, £19½; West Wheel Vor, 2s.; and Torbay Hematite Iron, £4½.

MR. LANE strongly recommends the purchase of South Lovell shares. The number of shares in which it is divided is few, the financial position good, the appearances excellent, and the chances of a rise in market value very great.

Parties of respectability can have transfers registered into their names previous to payment.

Bankers: London and County Bank.

### HUBERT BARNES RYE, MINING OFFICES, 77, OLD BROAD STREET, AND MINING EXCHANGE, LONDON, E.C.

WANTED TO PURCHASE:—50 Clifford Amalgamated. Sellers will oblige by stating lowest price.

MR. GEORGE BATTERS strongly recommends his friends to buy West Chiverton, Chiverton, Herodsfoot, South Caradon, Devon Great Consols, Great Wheel Vor, Wentworth Consols, and Sthney Wheel Metal for investment. These shares will pay good interest for money at present quotations.

76, Old Broad-street, London, E.C.

### MR. WM. BIRDSEY, MINE AND SHAREBROKER, No. 2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

JOSEPH J. REYNOLDS, JUN., 37, OLD BROAD STREET, LONDON, E.C.

Has a few Dividend Paying and Progressive Mines which he can confidently recommend for an immediate rise.

### MESSRS. WARD AND JACKMAN, 2, ADAM'S COURT, OLD BROAD STREET, AND MINING EXCHANGE, LONDON, E.C.

Bankers: London and Westminster, Lothbury.

### MR. THOS. THOMPSON, MINING OFFICES, 12, OLD JEWRY CHAMBERS, LONDON, E.C.

### WILLIAM SEWARD, 19, THROGMORTON STREET, LONDON, E.C.

MR. E. GOMPERS, MINING OFFICES,  
3, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.  
BUSINESS TRANSACTIONS IN BRITISH AND FOREIGN STOCKS AND SHARES.  
Terms, 1¼ per cent. Bankers: London and Westminster Bank.

MR. THOMAS CARTHAW, MINING OFFICES,  
17A, SISE LANE, BUCKLEBURY, LONDON, E.C.  
Reliable information respecting mining generally can be obtained by applying as above.  
Bankers: Roberts, Lubbock, and Co., 15, Lombard-street, London.

### WILLIAM BARTLETT, MINING SHAREDEALER, No. 2, BUCKLEBURY, LONDON, E.C.

Business transacted at the close market prices of the day. Advice given as to the safest and best paying investments. Telegrams promptly attended to.

Bankers: Alliance Bank, Lothbury.

MR. WM. MICHELL would recommend, amongst others, the immediate purchase of Wheel Rose, North Trekerby, Great North Downs, Hallenbeagle, East Grenville, North Chiverton, Bryn Gwlog, and Wheel Seton.

42, Cornhill, London, E.C., December 16, 1864.

BRYN GWLOG MINE.—MR. WM. MICHELL having UNDERTAKEN the DUTIES of SECRETARY of the ABOVE-NAMED MINE, all communications relative thereto must be addressed to him.

42, Cornhill, London, E.C., December 16, 1864.

### HENRY GOULD SHARP, STOCK AND SHAREDEALER, 32, POULTRY, LONDON, E.C.

Member of the Mining Exchange (Established 12 years.)  
Is in a position to give SOUND ADVICE and RELIABLE INFORMATION as to the SAFEST and BEST PAYING INVESTMENTS of the day, both in RAILWAY BANKING, MINING, INSURANCE, DOCK, GAS, WATER, FINANCIAL, and OTHER MISCELLANEOUS SHARES.

Bankers: London and Westminster Bank, Lothbury, London, E.C.

HENRY GOULD SHARP'S RAILWAY, BANKING, MINING, AND INVESTMENT CIRCULAR (post free) should be consulted by the public before investing. Dividends can be secured from 10 to 20 per cent. upon the money invested. It is a safe guide, containing reliable information and sound advice to capitalists.

(Established 12 years.)

Offices, 32, Poultry, London, E.C.

### MR. G. D. SANDY, SHAREDEALER, No. 48, THREADNEEDLE STREET, LONDON, E.C., has SPECIAL BUSINESS in the FOLLOWING SHARES:—

North Trekerby.  
Tincroft.  
Vale of Towry.  
West Wheel Grylls.  
Wheel Heale.  
Wheel Luddett.  
Wheel Kitty (St. Agnes).  
Wheel Kitty (Leland).  
Wheel Tremayne.  
Wheel Unity.  
East Lovell.  
Great South Toigals.  
Great Wheel Metal.

Recommended for immediate investment:—East Wheel Vor and West Great Work; both these mines are in the same district, and well worth attention.

A selected list of bona fide shares for investment forwarded gratis.

Current Daily Price List may be obtained as usual.

### MATTHEW GREENE, STOCK AND SHAREDEALER, 9, GRACECHURCH STREET, LONDON.

MR. GREENE has returned from Cornwall, and will be happy to afford his friends the benefit of all the information he has gleaned concerning the mines of the Gwennap and Redruth districts.

I have visited this promising mine in the company of some of the best mining authorities in Cornwall, and I am pleased to inform the shareholders that there exists only one opinion, and that is that New Clifford possesses all the elements necessary for ensuring success.

Investments in the following mines would be certain to pay well at present prices:—viz., New Clifford, £1¼; East Laxey, 2½; East Sasefell, £2½; North Trekerby, £2½; and Great Laxey, £18.

Commission 1¼ per cent.

Imperial Bank and London and County.

### MR. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (late of 43, Threadneedle-street), STOCK AND SHAREDEALER. (ESTABLISHED TEN YEARS.)

FOR SALE:—50 Kelly Bray, 16s. 3d.; 5 Great Laxey; 25 East Vor, 40s. 6d.; 45 Harriet, 12s. 9d.; 20 North Chiverton, £2 3s. 9d.; 10 Carn Camborne, 26s.; 3 Great Fortune, £7½; 50 St. Day, 21s. 9d.; 5 East Lovell, £14½; 10 East Russell, £5; 60 Crebor, 40s.; 1 East Basset, £49½; 4 West Caradon, £7½; 10 Hallenbeagle, £2½; 2 Trelawny, £18½; 1 Nanglies; 50 Great South Chiverton; 30 Bryntail; 100 Bedol-Aur; 10 Grenville; 10 New Rosewarne; 30 Lady Bertha, 15s. 9d.; 10 Frank Mills; 10 Camborne Vean, £2 3s. 9d.;—Dec. 16, 1864.



## Original Correspondence.

## FUND FOR THE RELIEF OF MINERS.

SIR.—Referring to the valuable report of the Royal Commission on Mines, and particularly to the last resolution contained therein—"That the system of Mine Clubs, as at present in general operation, is unsatisfactory, as not providing for cases of sickness as well as of accident," the Commissioners, therefore, suggest "The adoption of such a system of Mine Clubs as would afford the men sufficient maintenance during sickness, as well as while suffering from the effects of accident." This is a consummation devoutly to be desired. Many of the recommendations contained in the report with this object are very valuable, and so are the statistics there collected. The opinions expressed by a large number of mining agents, in their evidence on this matter, agree in the main with what I have held for a long time, on the subject of which I should have addressed you before now, but have been waiting the collection of some facts and figures bearing on the point. Mr. Thomas Nicholls, of Tavistock, has on several occasions recommended, through you and other sources, an Insurance Office for miners only; this, however, I think, is open to serious objections. Taking the report of Mr. Brown, the eminent actuary, as the groundwork of the Commissioners' suggestions, I would first notice that, by his calculations, the annual premium required for the payment of 10*l.* at death, and 10*s.* per week in sickness, ranges from 2*s.* 6*d.* per month at the age of 20, to 30*s.* per month at the age of 79 years. These calculations are, I believe, considerably too high. This table does not embody the principle of uniting small sums, so as to form a general fund, the young men helping the older ones; and I think I shall be able to show you that this may be done, and in a manner preferable to that suggested by Mr. Brown, and at a much smaller premium. A large majority of the miners are members of provident clubs, securing to themselves from 5*s.* to 10*s.* per week during sickness, and a sum of money at death for themselves, their wives, and families: the sum proposed by Mr. Brown as sick pay is, therefore, more than is required, as these two sums will make the average gettings of the miner.

Mr. Brown gives the rate of mortality amongst miners as 4 per cent.; I find that it is about 2½ or 3 at the utmost. Again, Mr. Brown says that from 2½ to 3 years of pure sickness may be assumed for each death; but, from careful calculations, I find that from 1½ to 2 years is about the average. Mr. Brown makes the allowance for sick at the rate of 5*s.* per week, equal to about 1*l.* 7*s.* per man per year; I make it about 12*s.* The difference in these figures is considerable, and, as one anxious that the best that can be done should be done for the miner, I should like to see some calculations from one or two of the mining districts in Cornwall. I may say that my figures are made up from a district in Devonshire. Mr. Brown, I have no doubt, made his calculations on what appeared to him good data. I have made mine likewise, aided by a considerable connection with miners, mine clubs, and friendly societies.

Before entering into any suggestions of my own, it will be necessary that I state the principles on which the majority of the Mine Clubs are at present conducted:—1*s.* 6*d.* per month is deducted from each man, 9*d.* of which is applied to a sick fund, and 9*d.* to pay a medical attendant for themselves and their families, under 14 years of age. The relief during sickness will average about 12*s.* 6*d.* per month—a small pittance for a man, it may be, with a large family dependent upon his earnings. In some cases 1*l.* per month in addition is allowed by the adventurers in case of accident, and in a larger number no sick pay is allowed; but pay exclusively for accidents. The following are some objections occurring to me to the above principles:—1. That the deduction of 1*s.* 6*d.* per month is not properly applied; if it were it would be found to be ample for a much increased scale of relief in sickness and accidents, the same medical attendance as now provided for, and a considerable amount left for division amongst the families of the unfortunate men accidentally killed, or cut off in the prime of life by the fatal diseases to which the miner is subject.—2. Want of success and other causes shut up a large number of mines after a brief existence, so that the Sick Fund accumulated during this period must necessarily be small and insufficient to meet its demands. But the mischief does not end here. I could name instances where miners have been seriously injured and disabled for life whilst employed in these mines, and what is the consequence? The mine is closed, and these unfortunate men are thrown on the cold mercies of the world, or of a board of guardians, when they have been subscribing to a fund to provide for such a calamity for, it may be, 20 or 30 years in the different mines in which they have worked. This should not be, and by the scheme I would suggest it could not happen.

In some mines you find the other extreme. In large mines in Devon and Cornwall the Sick Fund has accumulated to a large sum; and instances are on record where dividends have been made from this fund, or where a part of the fund has been applied to the working of the mine. I am sure, Sir, it must appear to the most superficial observer, that if these funds were united into one general fund, much good would arise to the miners and to the community. Mr. Tidd Pratt's rules for a Miners' Provident Benefit Society are in most respects very good; but I would recommend some alterations in the terms of contribution, amount of relief to be given, and some other particulars; and, for the sake of laying this before you practically, allow me to take the district of Tavistock. This fund should be called "The Tavistock District Miners' Relief Fund." Taking Tavistock as a centre, with a radius of eight miles, the number of miners employed is about 2500. Each man should pay 1*s.* 6*d.* per month, as at present. These sums should be kept on the pay-day by the purser or managing agent, and that he, on the most convenient day following, should hand the same, with a list of the names on the last pay-day, to the treasurer, at Tavistock; such sums to be paid into a bank to the account of three or more trustees, to be chosen from the principal mining proprietors of the district. All sick payments should be made on the production of a certificate signed by the medical attendant, and countersigned by the resident agent. The following calculations will show what I believe such a fund, with the addition of an annual subscription of 2*l.* 2*s.* from each mine, will be capable of:—

CREDIT—2500 men, at 1 <i>s.</i> 6 <i>d.</i> per man per month.....	£2250 0 0
Subscriptions and donations from mines.....	150 0 0=£2400 0 0
DEBIT—Sick payments—1½ year's sickness per death.....	£1895 10 0
Medical attendance, at 4 <i>d.</i> per man per month.....	500 0 0
Deaths—Ages: 15 to 25.....	£20 0 0
25 to 35.....	50 0 0
35 to 45.....	70 0 0
45 to 55.....	140 0 0
55 to 65.....	160 0 0=£440 0 0=£2335 10 0
Balance left, applicable to any emergency.....	£64 10 0

I think, Sir, the advantages of this plan over the present will at once appear to you. The scale of allowance for sickness would be beyond the present average, not that this sum in itself is adequate to his requirements without the aid of his allowance from his provident club; the both would be sufficient to keep "body and soul together." The proposed payment to the medical man, it is true, is lower than at present, but I am quite sure the sum named is ample for the provision of good medical attendance. I admit that on the present system of every dozen or score of men having their particular doctor the pay is not excessive, but I would propose that the Tavistock district should be divided into two or three circuits, and the salaries apportioned according to the number of men residing in each.

The allowances on deaths are most desirable. I would here remark, that I think it is but reasonable that where fatal accidents occur this allowance should be supplemented by a contribution from the company, and I believe that no objections would be raised in assisting a fund of this kind. These allowances, with economy and right application, would tend a great way towards providing means by which the mourning and bereaved wife might be able honestly to support her fatherless ones. The amount of allowance, 5*l.*, on the death of a young man would be sufficient to bury him respectfully, and without cost to his parents or friends. The allowance of 10*l.* is supposing that the miner should leave a family, the youngest under 14 years of age, assuming that all above this age would be able to provide for themselves. The allowance to old men, 5*l.*, would bury them decently, and without cost to their friends or charity from their neighbours.

The above are, I believe, good principles upon which to establish a fund for the relief of miners, the details of which would require a large amount of consideration, and I would suggest that some of our practical agents and gentlemen interested in mining industry do give their opinion as to the practicability of this scheme, with any suggestions which their more extended experience than the writer's may enable them to give.

This matter should be taken in hand by some of our larger mining companies, as they would be most affected by the change. Any balances standing to the credit of sick funds should be transferred to this general account; this would give a good sum to begin upon.

The expenses of management (a small payment yearly to a secretary, and

incidental expenses) would, I calculate, be met by the liberal donations and subscriptions of fortunate shareholders, lords of mines, and merchants.

R. H. W.

## THE ADMIRALTY STEAM-COAL LIST.

SIR.—Now that the Admiralty steam-coal list has been enlarged by the admission of North Country coal, the coal owners of South Lancashire and Cheshire are very properly exerting themselves to obtain a similar advantage for their district. Mr. L. E. Fletcher has been appointed to conduct the experiments in the district previous to sending samples for the official trials, and I believe the coal masters generally are confident of great advantage resulting to them from the recognition of their coal by the Admiralty. It is very truly said that the list has now become a commercial standard by which foreign orders are regulated, and as I am quite convinced that our coal would bear very favourable comparison with that of Durham and Northumberland, I look forward to Lancashire steam-coal being ere long as well known in the markets of the world as any in the kingdom. The permission of the Duke of Somerset that the coal shall be officially tested has been already obtained, and I trust that those interested will be kept well informed through the Journal of the progress made.

In estimating the probable success which will attend the Government trials, we have the gratification of knowing that the Lancashire coal is already used for steam purposes to an extent which North Country coal has never hoped for, and that it has always been found fully to answer the purpose, whilst the competitive trials of Welsh and North Country coal proved that even to burn a mixture of the two coals considerable alterations in the furnaces would have to be made, at an expense which the supposed advantage of the mixture by no means justified. For marine purposes I believe that there is no coal equal to the Welsh, since it undoubtedly is the coal which will take up the smallest space in stowing the quantity required for raising a given quantity of steam, and the raising of steam quickly is very seldom of importance. Wherever space is valuable Welsh coal alone should be used, but for manufacturing purposes I believe that the South Lancashire and Cheshire coal will stand against all rivals. Let the Association exert themselves to get the coal recognised by the Admiralty, and the trade of the district will receive an impetus of the utmost value to them.—Wigan.

H. P.

## MAGNESIUM.

SIR.—Referring to your recent notices of this metal, and more particularly to the paragraph in last Saturday's Journal, in which a Mr. Grant anticipates that "ere long magnesium will be produced as cheaply as zinc," perhaps you will allow me the opportunity to state that the company must only be considered responsible for such statements as proceed from themselves or their agents, Messrs. Johnson, Matthey, and Co., of Hatton-garden. I may add that, as regards the cheapening of the metal, Mr. Sonstadt's patents afford every facility for manufacturing cheaply, if the demand shall justify such an extension of the works as to manufacture on a large scale. I beg to enclose you a photograph taken in this city at 6 P.M. on Nov. 10 by the magnesium light, which will speak for itself.

Manchester, Dec. 12. J. MATHER, Sec., Magnesium Metal Co.

[The photograph sent, a carte de visite vignette, both for sharpness and depth of shades, has all the appearance of a sun picture, taken under the most favourable circumstances that could be hoped for in this country.]

## COPPER ORES OF LOW QUALITY.

SIR.—Having read with some degree of interest the several papers which have of late appeared in the Journal, in reference to the suggested improvements on the ultimate process of dressing waste tin ores, I trust the information will be fully appreciated, and found generally beneficial to those interested in tin mines. I am also led to believe, from my own experimental analysis and practical observation, on a small laboratory scale, that improvements are to be made on our low-price copper ores, such as sulphides and arseniates, and generally designated as pyrites, or yellow ores of low percentage, so as to enhance their present value at no great expense, in returning larger profits to the shareholders, and less labour at the smelting-works. I will take, for instance, New Wheel Martha, selling a considerable quantity of this class of ores bi-monthly: if these ores, after being dressed, were submitted in regular quantities, for a given time, to the ordinary process of oxidation in a large reverberatory furnace, they would be easily divested of a variety of impurities with which they are usually contaminated, and generally form the composition of this particular class of ores. After being sufficiently oxidised, the residue from the furnace would yield a much greater percentage for copper, as well as for silver (which these ores are known to contain, which accounts for the usual purchasers), without at all being deteriorated by this manipulation. By this process the original quantity of ores would be considerably reduced, and prove more proportionately remunerative to the shareholders, if only on the saving effected in the carriage of ores from the mines to the place of shipment. The refuse or waste from these ores might also be made commercially available: the leading mercantile commodity after this process of calcination would be arsenic, at all times easily marketable, and yielding another source of profit to the shareholders. If this mode of operation were carried into effect, and adopted on a more extensive scale in the mines producing large quantities of low ores of this description, I have every confidence of successful results. I hope in some future number to give the details of my analytical experiments on the several varieties of arseniates and other low-quality pyritic copper ores, before and after their oxidation, both qualitative and quantitative, with their respective products.

General Assay Office, Liskeard, Dec. 13. M. W. BAWDEN.

## CREASE'S BORING-MACHINE.

SIR.—There is a peculiar idiosyncrasy belonging to some persons whereby they are apparently obliged to go a round-about way to obtain information. Thus "Mine Agent" (Tavistock) send to London to find out what he might have sooner and easier learnt in his own parish. I suppose such people cannot help it, and I only object to it because it entails an unnecessary amount of trouble.

For the reason why the machine has not been working, I refer him to Mr. Crease's letter in the Journal of Aug. 6. I never stated that the machine could be seen at work; on the contrary, in the only letter I have written to the Journal on the subject I stated *why it could not be seen at work*. I shall be glad to give every information in my power respecting the machine to all *bona fide* enquirers, on application, either personally or by letter. Mr. Crease is now fixing his machine at Gard's shaft, and as soon as it is fairly at work it will be open to the inspection of all who are legitimately interested, under the reasonable condition that these inspections shall in no way interfere with the business of the mine. The trial will be made at the entire expense of Mr. Crease, an agreement to that effect being in the possession of our secretary, Mr. T. B. Laws.

South Bedford Mines, Dec. 14. W. G. GARD.

## WATER-WHEELS AND TURBINES.

SIR.—In last week's Journal your Carnarvonshire correspondent, in comparing the water-wheel and turbine, says, with reference to the latter, that it is liable to get out of order, and that it requires cog-wheels to control and guide it; and as these remarks would very readily mislead those who know no better, and at the same time delay the introduction of this excellent working machine, I beg leave, by your permission, to state from the experience I have had of the turbine made by the North Moor Foundry Company, that it is not more liable to get out of order than a water-wheel, and I believe that 20*s.* will cover the cost of tear and wear for five years. As to the latter part of his remarks—about cog-wheels—were they correct, I would only say, better have a machine that could be governed by a cog-wheel, or some other means, than to have one quite ungovernable, as the water-wheel very often is, when working by itself. But as those remarks are not correct, I will endeavour to show it by comparison; and, as slate quarrying is the subject of your correspondent's notes, we will go into a slate quarry, for example, because a water-wheel may drive a set of stamps without a cog-wheel; but so can a turbine drive a circular saw for wood, or a centrifugal pump, or fan blast: but slate-saws or planing-machines are what we have to deal with. We will begin with a water-wheel of (say) 30 feet diameter, a very common size in Wales, and we will suppose it to make four turns per minute; it must then have a cog-wheel or segments (say) 12 feet diameter, driving a pinion of 2 feet, or driving the lines of shafting about twenty-four turns a minute; on this shafting, if for a planing-machine, the drums will be about 8 feet diameter, and if the slabs are hard this will not be enough; if a 4-inch strap is used, it will at once be evident that to drive these large drums the shafting must be stronger than if 2-feet drums were used, as is the case with the turbine; for, if we suppose the turbine runs at 600 turns per minute, having a pinion 12 inches diameter, driving a cog-wheel or main line of

shafting of 6 feet diameter, we get 100 revolutions, and, therefore, drums of one-fourth the diameter will give off the same power. While the speed of the cog-wheel causes it to be a reservoir of power, and truly a governor quite sufficient to regulate a heavy cut on a planing-machine, which is not the case with a water-wheel, although a heavy fly might be placed in the shafting for this purpose; but then it would require to be just four times the height of that on the shafting driven by the turbine. Your correspondent says, "better bear the ills we have than fly to others that we know not of." It would be well for those intending to speculate in slate quarries to bear this in mind, and also to bear in mind that the money laid out in a turbine is the safest part of the speculation.

Maentwrog, Dec. 14.

G. HUNTER.

## QUARTZ MINING MACHINERY IN AUSTRALIA.

SIR.—Doubtless there are other readers of the Journal who like myself have been expecting to hear of improvements in quartz mining machinery, as the close proximity of the Welsh gold mines afford to the savans of England such easy access for observation and practical experiments. So far, however, these anticipations have not been realised, and from the account in the *Mining Journal* of July 2 of a lecture delivered at the School of Mines, London, by Mr. W. W. Smyth, upon the "Mechanical Dressing of Ores," particularly in that portion referring to stamping-machinery, it is evident that at least some of the heads of the mining world at home are not even acquainted with the real progress made in this description of machinery at the Australian mines; and as Mr. Smyth, in referring to our plan of stamping, informs the public that it is objectionable, and "may be consigned without hesitation to the limbo of obscurity," I take the liberty of replying through the columns of your Journal to such a sweeping announcement, by stating that there are scores of stamping batteries, similar to the approved machines of Mr. Smyth, now lying about the gold mines of Australia, until disposed of as old iron, solely because these batteries have been superseded by the introduction of machinery of greater efficiency and economy in working. Experience has proved to the gold mining companies here that the best of the Cornish stamping-mills was but an indifferent machine, clumsily fitted, and constantly needing repairs, and in many of its details not the most suitable for auriferous quartz, however they may be for tin, &c.; and by the substitution of a higher class of workmanship and lightness in design, wrought-iron and steel for cast-iron, fewer parts, less friction, self-feeding arrangements, &c., much more satisfactory results have been obtained. In the item of wear and tear alone a reduction has been effected from 1*s.* 9*d.* to 8*d.* per ton, and when I add that there are mills here operating upon upwards of 1000 tons of quartz weekly, it will be seen that this single item is a welcome addition to the annual returns.

In answer to Mr. Smyth's objections to revolving stamps, experience has shown that they require less power in working, the lifters being turned, and revolving in antifriction metal guides, have no appreciable wear after three years' service. By dispensing with the cumbersome cam barrel, leverage is lessened, a higher speed of piston attained, and in allowing the lifter to revolve a large amount of friction in raising the stamp is obviated, and the stamp shoes are worn perfectly even throughout. It would not be difficult, did your space permit, to enter into details that could not fail to convince gold mining companies, at all events, that the modern stamping batteries here are as superior to the battery described and recommended by Mr. Smyth as a modern locomotive engine is to the original "Rocket."

We frequently read in the home journals absurd accounts of things Australian, which rather amuse than otherwise; but when lecturers at the School of Mines intimate (in the most disparaging manner, and without ascertaining the actual facts) that the last ten years' experience in quartz mining here has only produced an objectionable stamping machinery, it is clearly time for a refutation to be given to such erroneous statements. Being consulting engineer to several of the largest mining companies, whose mills collectively reduce an average of 2400 tons of quartz weekly, I may be permitted to have an intimate acquaintance with the subject. [I enclose my address, for your satisfaction].—Ballarat, Oct. 25. D. B. P.

## OTEA COPPER MINE.

SIR.—I was glad to see attention drawn in last week's Journal to this valuable mine. Very few undertakings of such merits have been offered to the public on such reasonable terms. Before becoming a shareholder I took much pains to investigate the affair, and I arrived at the conclusion that with good and energetic management the concern can be made a most profitable one in a comparatively short time, and at small cost. The mine has already yielded about 30,000*l.* worth of ore, with the aid of only a small 8-horse engine, and very rude dressing machinery. According to the reports of several of the most experienced and trustworthy practical agents, there are still thousands of tons of good ore (fully 15 per cent. produce) in the limited extent of ground yet opened, which can be returned at a good profit. With the inefficient means hitherto available, the dressing cost was as high as 5*s.* per ton, while with the new and powerful machinery now sent out this item will not likely exceed 1*s.* 6*d.* per ton. The mine is on the coast, and the ore is at once put on board barges, which take it to the vessels in a neighbouring safe harbour, so that there is no land carriage—a very heavy item in nearly every other foreign or colonial mine. The woollens bring it home as ballast, at the nominal price of 2*s.* 6*d.* to 12*s.* 6*d.* per ton. The mine is, therefore, situated as favourably as if in this country, except with regard to distance, and this is more than counterbalanced by the quality of the ore, which is three times that of the average of Cornwall and Devon.

I am told that the company intends to confine its attention for a time to erecting the best machinery, and to returning, in the most economical way, a portion of the ore laid open, by which course a large profit will likely be made, the application of which can be devoted to dividends and further development. Captain Holman (a high authority) states that there is proof shown, by the deeper explorations, that the ore is not merely superficial, but it is a vein that will evidently continue in depth; "and if only a permanent increase in the yield of ores takes place throughout the vein, such as seen in the 12 ft. level, the future value of the mine would be very great." Another well-known agent remarks, that there cannot be two opinions but that present appearances indicate improvement in depth, and that "but a slight general improvement is required in the lode to make the Otea an exceedingly valuable mining property."

The present company acquired the mine and 800 acres of land as *freehold*, on exceedingly moderate terms—far less than some companies have given for short leases of mineral properties not possessing nearly such advantages.

Observing that one of your correspondents had drawn attention to the subject, I thought that a few particulars would not be unacceptable to your readers; and if anyone should wish for further information, I feel certain the secretary will be happy to afford it by application personally, or by letter, at the office, 8, Austinfriars, London.

A SHAREHOLDER.

## GOLD MINING IN WALES.

SIR.—Every careful reader of the Journal who takes an interest in this important question must be more and more satisfied that those persons who constantly affirm that gold will never be found in Wales in sufficient quantities to pay the cost of its extraction are likely to find that it is not well to be too positive on any question; it is quite true that should the mines continue to be managed as they have been for some considerable time past it would require more faith than I possess ever to expect any return on the capital expended, but it appears at last that the directors of some of the different companies are alive to the fact that some effort must be made to bring their property into a paying state. From the report of the East Glogau Gold Mining Company meeting, which appeared in last week's Journal, the directors have had the good sense to call in Mr. A. Dean to inspect their property, who after a careful examination has satisfied himself that the property contains gold in paying quantities, and recommends that sufficient stamping machinery be erected to stamp at least 25 tons daily. When it is considered that Mr. A. Dean was the original discoverer of gold in Wales, more than twenty years ago, and has ever since given the question great attention, it is not too much to expect that his suggestions will be carried out, to the profit and satisfaction of the directors and shareholders of that company.

Although gold mining in Wales is still in its infancy, yet the drops are increasing, giving signs of a plentiful shower after awhile, as any may judge for themselves by reading last Saturday's Journal, wherein I find that the Welsh Gold Mining Company returned 5 ozs. 14 dwts. 5 grs. of gold from 12 cwt. of quartz, for one week, from the Britten; Castell Carn Dochan, 2 ozs. 4 dwts. 12 grs. from 19 cwt. of quartz, also one week; and Gwynnydd Gold Mining Company, 6 ozs. 2 dwts. of gold from 4 tons 11½ cwt. of quartz. After the stamps are at work both at the Vigna and Clogau, and the Welsh Gold Mining Company's Mines, it will require a very bold person indeed, and blind as well, to deny that gold mining is not only a fair speculation, but a highly profitable one.—Dec. 12.

## EAST GRENVILLE MINE.

SIR.—Will you, with your usual love of fairness, allow me space to reply to the remarks of Messrs. Watson and Cuell in last Saturday's Journal—namely, that "A difference of opinion seems to exist as to the real state of the 75, that of Capt. C. Thomas being favourable, and that of a Mr. A. James being quite the reverse. Time will show who is right; in the interim, it is only fair the public should know that while Capt. C. Thomas is the first and most honest practical authority of the day, the other, who is doing all he can to injure the property, is a jobber in shares." Thus insinuating and attributing to me motives unworthy of any honest man. If they could disprove or gainay a single statement that I have made, I would not trouble you with the following remarks. In the first place, I beg to ask, if Capt. C. Thomas's report is so very favourable why do they publish it, for the good of the public, and the benefit of shareholders generally? I know Capt. C. Thomas quite as well as Messrs. Watson and Cuell, and if he has given as faithful a report of East Grenville as he did of Wheal Grenville, some seven months ago, he will not only have done credit to himself and the county in which he resides, but to the mining community at large. That report was published, and the result is well known to all interested parties. I need not say the shares have gradually receded from 12*l.* to 4*l.* 10*s.*, the present price.

Messrs. Watson and Cuell say the ore is dipping west from East Grenville into Wheal Grenville, but I should like to know the reason they can give for such an assertion. I will give but one fact respecting East Grenville, and then leave the matter entirely in the hands of Messrs. Watson and Cuell to answer at their leisure. The central part of the mine sinking under the 65 is about 29 fms. west of shaft, or a little short of 8 fms. to the west of where the ore was first met with; the winze is being sunk in the richest



The lode in the western end is about 18 in. wide, and scarcely ore enough to make a value, whilst the lode in the eastern end is 4 ft. wide, and for 3 ft. long it is worth 100 lbs. of ore. The writer is, however, in error as to the lode in the eastern end, and it is not to be taken as a rule. The lode in the western end is a westerly dip; if there were, the lode would be widest and richest in the western end of the mine, but such is not the case. It is my opinion if a lode of ore be met with in the 75 it will be quite independent of what has been seen through in the 68.

ABRAHAM JAMES.

## HALLENBEAGLE MINE MANAGEMENT.

I noticed in last week's Journal a letter signed "T," but it should, I think, have been signed "H." The writer is, however, in error as to the lode in the eastern end, and it is not to be taken as a rule. The lode in the western end is a westerly dip; if there were, the lode would be widest and richest in the western end of the mine, but such is not the case. It is my opinion if a lode of ore be met with in the 75 it will be quite independent of what has been seen through in the 68.

Manager of the Truro Steam Saw Mill Company.

## MINING IN AUSTRALASIA—MONTHLY SUMMARY.

[FROM OUR OWN CORRESPONDENT.]

Adelaide, Oct. 27.—Since my last nearly all the mines at work in the colony have made some improvement, several of them having done so to a considerable extent. The Moonta now quite outstrips the Burra in the quantity of ore raised, and scarcely in the palmist days of the old mine did it show results equal to those recently exhibited by its young rival. I was for some time sceptical as to the superiority of the Moonta mine in results as a mine. I believe all practical men would agree that the Moonta mine is the best; but now the astonishing returns of ore from the mine are beginning to show that in this respect the Burra is fully equalled, if not surpassed. The half-yearly report of the Moonta Company, adopted at the third annual meeting of shareholders, on Sept. 30, shows that, notwithstanding the ten weeks' strike amongst the mine, 3,772 tons of ore were raised during the half-year—practically, in less than four months. The produce is rather higher than before, estimated at over 19 per cent. pure iron. Its value, at 11s. per ton, amounts to 59,021s., the cost of raising was 27,246s., or 6d. per ton, leaving a profit of 31,775s., or 5s. 10s. 6d. per ton. Capt. Hancock, manager of the mine, is a gentleman of some scientific attainments, besides having a practical knowledge of mining, and he has proved the soundness of his judgment both here and at the neighbouring Yelta Mine. He has nearly doubled the number of hands employed at the mine, the total number being now 690, and he states he has room for more, three or four not being worked for want of men. In six weeks about 2400 tons of ore were raised, and I believe this yield is pretty well kept up. In some abandoned ground twelve years ago he has recently been raising ore to the value of about 8000s. per month. A dividend of 10s. per share has been declared, and another is announced for Nov. 15. The Wallaroo Mine also is yielding increased quantities of ore, from 1400 to 1600 tons per month being the present rate. A new discovery has just been made on a section of the mine, and the Wallaroo Mine, which is thought very promising, but it is not sufficiently developed for an opinion to be pronounced on it with any confidence. The discovery is also announced in the KULPARA MINE, about ten miles from Wallaroo. The mine was abandoned some time ago; but a good lode is said to have been discovered, and the lease of the section has been secured. The Yelta Mine is going on very satisfactorily, the lode still holding good, and yielding a moderate supply of grey and black ore. The New Cornwall Mine has produced more ore lately; but I do not think any important improvement has taken place. The neighbourhood of the mine has been a great success in the way of mining, and a discovery is announced as having been made on the River Light, six miles from the mine, and a very likely place for copper. Two or three miles in the more immediate neighbourhood have also started working recently, with good prospects of success. Others amongst our second-rate mines are looking up, and their steady and progressive development shows that the mineral wealth of the colony is by no means exhausted, or nearly all known as yet.

The KANARA MINE is likely to prove a valuable one: a rich lode has been cut at 100 yds., and at 130 yds. still holding good, the width varying from 6 to 9 feet. The report from the YUDANAMUTANA and BILIMAN MINEs go to disprove the statement which has recently been made to the effect that the total value of the produce of the mines for London during the past three months is said to be nearly 11,000s. The Yelta Mine will take about 100 tons of very rich ore, stated to average 50 per cent. of iron, and of rough copper, of 95 per cent., and the Royal Edward, via Sydney, 230 tons of ore. The state of the country in the North was very much against the raising of these mines during the late drought; nevertheless, the Yudanamutana continues to yield good ore, and the Biliman Mine is yielding as well as ever. My remarks on the relative value of the Moonta and Burra Mines, I had no intention of depreciating the latter per se. The half-yearly report just published shows a very satisfactory state of things, even though they may not be equal to what they were in the previous year. The report shows that 3,462 tons of 22 per cent. ore were raised during the half-year, showing a net profit of 16,027s., or 3s. 16s. 8d. per ton. Some new branches of the mine have been cut, and also a lode 5 ft. wide, but not of the richest quality, though containing blue and green carbonate. The mine has been at work nineteen years; but it is still a large quantity of ore remaining: 75 pitches are at present being worked. Workings are not going on below the 60 ft. level, although some few years since were extended to the 75. There is, therefore, a considerable extent of ground in reserve, and to contain large deposits of ore.

Victoria.—No changes of any especial importance had occurred on the fields within the previous few weeks. The tendency still was towards an increase in the amount of deep sinking, but not one of the late fields had assumed large proportions. The boring-modes have disclosed the existence of gold in many likely-looking places, and the more widely the search is made the more likely it seems to be to set any limit to the branching and ramification of deep leads under a large tract of country. The late mania for shares has greatly retarded the formation of companies, and there will now be no want of capital for all projects of the kind with any promise of success. The continued success at the principal lead companies at Ballarat will be best learned from the returns obtained during the quarter. Of these, the Band of Hope Company now stands first on the list, with 40,000s. of gold, and a payment of 24,000s. in dividends; the Koh-i-noor Company washed out 6587 ounces of gold, and paid to its shareholders 15,600s. during the quarter. These payments being in all cases clear of expenses. The Great Extended is the other company at all of 14,000s. of gold, and the extent of its operations, and the quantity of gold obtained by it was 3036 ounces out of the proceeds of which the large dividend of 10,000s. was paid in dividends. A number of the smaller companies, too, are doing well just now. The St. Arnold Silver Mines, also, are showing a large amount of metal. The local paper, the Mercury, states that 394 tons of stone from the reef have been delivered into the presses in the fortnight ending the 5th inst. The mine has been 7788 ozs. of amalgam, which is calculated to give from 1200 ozs. of metal. As may be supposed, this large increase in the yield of so many of the mines has intoxicated many imaginations. Lydiard-street, Ballarat, was for weeks a scene of such excitement, and the number of people who were flocking to the reef for a share in the quartz reef at Wood's Point, which share became worth a few weeks afterwards. But I am told that such prizes as these are rather rare among the leading "refiners," many of whom have rapidly made very large fortunes, and to be sometimes lost again as rapidly by this engrossing sort of lottery.

The clearances of gold during the week ending Oct. 22 have amounted to 100,000s., making the total shipments since the commencement of the present year 1,233,878 ozs.; of which quantities, 1,233,878 ozs. were the produce of Victoria, and 41 ozs. transhipments from New Zealand. The shipments made from Melbourne during the corresponding period of last year were 1,251,330 ozs. of Victorian gold, and 400 ozs. of New Zealand gold, giving a total of 1,508,220 ozs.

The Otago Times reports that gold fields on all sides are improving. Large quantities of the precious metal are being obtained, fresh ground is being opened up, and the carrying on on a large scale, and no one seems to deny that there are indications to justify a considerable accession to the mining population.

The South Australian (Burra Burra) Mining Association meeting reported showed that the yield of ore for the six months ending Sept. 30 was 3462 tons, and to contain an average of 22 per cent. of metallic copper. At the beginning of the year there were upwards of 95 tons of copper on hand, and during that period 389 tons have been received from the Smelting Company for ore delivered, being 484 tons more than 625 tons. Of this amount 100 tons have been exported to Britain for sale, 408 tons have been sold in the province, and very nearly 120 tons have been sold on hand. The first balance sheet of the association shows that during the year 4189 tons of ore were raised, at a cost of 38,159s. 13s. 9d., or 9s. 2d. per ton, yielding 54,187s. 10s. 6d., or 12s. 8s. 8d. per ton, leaving a net profit, therefore, of 16s. 9d., or 3s. 16s. 8d. per ton. These results, when compared with those of the previous half-year, show that while the ore was less in quantity, and did not realise by one guinea a ton, the expenditure was so far diminished as to leave the gross profit larger by upwards of 2000s. To these profits are to be added 1000s. for rents, 2s. 6d. for fees received during the half-year under review, making the total profit 16s. 9d., from which the 54 dividend, paid on the 3d ult., has been written off, leaving a sum of 14,000s. to the credit of the profit, covering all the transactions of the Association to March 31 ult. On Sept. 30 the company's establishment consisted of the Burra Burra Mine: 218 men, 202; 218 men, 49; owners' account: 18 men, 2; total miners, 239; ore-dressers—men 71, boys 25; mechanics: 22 men, 22; engine-drivers, 4; weighers and fillers, 5; stablemen, 5; valet, 1; labourers, 25; white and cart boys, 37; officers, 10; total at the Burra Mine, 618.—At Karkulu Mine: 218 men, 202; 218 men, 49; owners' account: 18 men, 2; total miners, 239; ore-dressers—men 71, boys 25; mechanics: 22 men, 22; engine-drivers, 4; weighers and fillers, 5; stablemen, 5; valet, 1; labourers, 25; white and cart boys, 37; officers, 10; total at the Karkulu Mine, 618.—At Karkulu Mine: 218 men, 202; 218 men, 49; owners' account: 18 men, 2; total miners, 239; ore-dressers—men 71, boys 25; mechanics: 22 men, 22; engine-drivers, 4; weighers and fillers, 5; stablemen, 5; valet, 1; labourers, 25; white and cart boys, 37; officers, 10; total at the Karkulu Mine, 618.—At Karkulu Mine: 218 men, 202; 218 men, 49; owners' account: 18 men, 2; 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In Devon Great Consols had recently become interested in East Russell, and the more especially so when it was recollected that Capt. James Richards was the manager of both mines.—A call of 7s. 6d. per share was made.

A vote of thanks to the Chairman terminated the proceedings.

#### BRYN GWIOLG MINING COMPANY.

A general meeting of shareholders was held at the offices, Broad-street-buildings, on Tuesday.—Mr. J. BALSTER in the chair.

The notice convening the meeting having been read, the minutes of the last were confirmed. A statement of accounts, made up to the end of Nov., was submitted, which showed a credit balance of 500l.

The report of the agent (Capt. Evans) was read, as follows:—  
Dec. 12.—In the 102 east the lode is large, but at present much mixed with limestone, and poor for lead; as there is a good lode before this end, as seen in the bottom of the 90, we look for an early change for the better. The 90 east will produce 15 cwt. per fm. A stope behind is worth 2 tons per fm. In the 90 west, on the run of ore, it will produce 1 ton per fathom. A pitch in the 85 east is worth 15 cwt. per fm. The 75 east is in shale, and poor at present; our object in driving this level is to cut the run of lead ore worked on in the upper part of the mine, and I consider this level a good speculation to drive, as should we cut this run, of which I have little doubt, it will be most important for the mine, seeing it will discover a considerable height of ore ground. The two pitches below 15 tons per fm. will be a good thing for the mine. The 75 west will produce 1 ton per fm.; ground rather hard for opening—in fact, all our ground is hard for working. In back of the 66 we have two pitches, which will average about 1 ton per fathom. At new shaft, on the western part of the mine, in the 20 cross-cut, we think there is an east and west lode coming in; this will be proved in two or three days, when I will report more fully on it; this lode to the west of our boundary produces well for lead, and seeing we have a long line on this lode in our set, it is rather an important feature to develop. The returns from the mine, judging from present appearances, will be about the same as the last quarter, from 40 to 50 tons per month, at a cost of about 500l. The 40 tons sold on the 8th inst. brought 14l. 3s. 6d. per ton, and the 50 tons of blende 30s. per ton. All the machinery is in excellent working order, and the most important points of the mine pressed forward with vigour.—F. EVANS.

Mr. W. MICHELL, replying to a question as to the assets, stated that there was at the bankers about 530l., a parcel of lead ore (not paid for) of the value of 600l., and blende to the value of about 100l., so that the financial position of the company was never so good as at the present time.

Mr. F. G. LANE enquired if there was not something owing to merchants?—Mr. W. MICHELL said that the assets were more than sufficient to pay off the whole of the outstanding liabilities.

Mr. C. POWELL, referring to the general prospects of the mine, said he had understood that the real object which the present company had in view when they took up the mine—the reaching of a certain deposit of ore, partially developed by the former workers—had not yet been attained. He should like to know if such were the case?

Mr. W. MICHELL said it was perfectly true that the particular course of ore to be sought after when the mine was started by this company had not yet been seen, but as soon as they resumed the sinking of the old shaft and came upon the white limestone, they expected to meet the same course of ore which the former workers had, 12 ft. wide. It was generally supposed by experienced miners that as soon as the white limestone was reached they would get into soft ground, and the returns of lead would be considerably increased—that would be ascertained in 10 fms. sinking.

Mr. COUSINS wished to know if the costs were likely to increase, or otherwise?

Mr. MICHELL said it was estimated the costs would be about 500l. per month, against which there would be a monthly produce of from 40 to 50 tons of lead, of the value of about 14l. 10s. per ton, in addition to which there would be some blende. The mine was now provided with ample plant and machinery; they had a good pumping engine drawing engine, and a crusher, that could return 300 tons of ore per month just as cheaply as they could return 50 tons.

Mr. F. G. LANE supposed that Mr. Michell anticipated the mine would make profits from this time.—Mr. MICHELL said, with a cost of 500l. per month, if they raised only 45 tons of lead, there would be a profit of 100l. per month—that was altogether independent of the blende.—The report was ordered to be entered on the minutes.

The meeting then proceeded to the election of a secretary in the room of the late Mr. Dunford.

Mr. COUSINS proposed that Mr. W. Michell should be appointed to the office, which was seconded by Mr. C. POWELL.

Mr. S. ELKES proposed Mr. W. Ward, which was seconded by Mr. SWANNELL. Upon the question being put, it was found that there was 250 (shares) votes in favour of Mr. Michell, and 186 in favour of Mr. W. Ward. Mr. Michell was accordingly appointed secretary. The general meeting was adjourned till Monday, in order that the statement of accounts should be revised, and submitted in a more extended form.

#### GREAT SOUTH CHIVERTON MINING COMPANY.

A general meeting of shareholders was held at the London Tavern, Bishopsgate, on Thursday.—Mr. G. P. GREEN in the chair.

Mr. H. CHAPMAN (the secretary) read the notice convening the meeting, and the minutes of the last were approved.

A statement of accounts for eight months (March to October) was submitted, from which the following is condensed:—

Call made, April 14 (10s. per share) .....	£3000 0 0
Labour cost for eight months .....	£712 1 6
Merchants' bills .....	224 10 3
Advance of dues .....	210 0 0
Advertising, printing, and sundries .....	160 4 7
Law charges .....	65 0 0
Secretary, eight months .....	67 4 0
Discount on calls paid .....	59 2 6=
Leaving credit balance .....	£1501 17 2

The report of the secretary stated that it might be desirable in this, the first general report made to the shareholders in the Great South Chiverton Mine, to state that at the meeting held at the London Tavern, on April 14, a resolution to divide the mine into 6000 shares, and another to call for 10s. on each share, was also an additional one, prescribing the rules and regulations under which the company should be conducted. The call of 10s. per share provided a fund of 3000l. for the development of the mine. The reports that had been previously made by Capt. John Nancarrow afforded reason to believe that the expenditure of this subscribed fund would carry the operations on so far as to place the great value of the mine beyond all doubt, if it did not suffice to bring it into a paying condition. The reports that have been subsequently and regularly made by Capt. John Nancarrow, the manager and purser, and Capt. John George, the resident agent, as well as the report of the committee which visited the mine in the month of August last, have in all respects sustained the expectations that were originally entertained, and so placed beyond all reasonable doubt the fact that the adventurers are in possession of what will become a very valuable property. Seven large and strong lodes have been opened upon, and present all the indications of being fine lead-bearing lodes, and considerable progress has been made in cutting and driving an adit from north to south. The progress and details of the workings have been given from week to week in the *Mining Journal*, and the reports from Capt. John Nancarrow and John George, appended to the report, comprises a succinct review of the whole. It will be seen that, in addition to the cutting and driving of the adit, which has been a work of considerable labour, chiefly in consequence of the large quantities of water interfering, the necessary buildings of the mine have been erected in a workman-like and satisfactory manner. It is impossible to compare the work that has been done with the money expended without coming to the conclusion that judgment and economy have been combined in the operations, as it is almost impossible to carefully read the reports of the manager and agent without getting a strong impression that the company is in possession of a very fine silver-lead mine, which requires only an adequate but moderate expenditure to render it a very profitable one. A reference to the cost-book, of which an abstract is given in the balance-sheet, shows that the balance of assets over liabilities is 1501l. 17s. 2d. On Oct. 14 I addressed a circular to the shareholders, urging those who had not paid the call to do so without delay. It will be for this meeting to determine what step, if any, shall be adopted with reference to the arrears.

The report of the agents was read, as follows:—  
Previous to the meeting in April we had just discovered a fourth east and west lode, and since then we have opened on a fifth, about 10 fms. north of the south lode marked on the plan. These lodes, so far as opened on, presented a most encouraging appearance, but, from the great influx of water, could only be seen at depths of 2, 3, and 4 fms. from surface, from which a correct opinion could not be formed as to where an engine-shaft should be sunk, as it is utterly impossible to sink with a horse-whim; it was, therefore, determined to bring up an adit from the 10th, or west, part of the set as deep as it could be driven. After cutting an open drain for 40 fms. and reaching a depth of 12 to 13 ft., we commenced driving, and immediately encountered quarry ground, which lasted about 70 fms.; then we got into blue ground, and discovered a lode, which had not been previously seen, running a little east of south, composed of flookan, mudstone, and granite, in which we found some stones of lead and copper, which had altogether a most promising appearance, but which changed on getting into rather disordered ground, partaking of the nature of quarry, which has continued through a great deal of our workings. The lode, however, opened on for 35 fms. in this ground contained strong gossan, and showed good indications of being productive in a change of stratum. There is a level driven from this lode towards the pit by the road where we had lead, and is nearly under it; in this end we have the east and west lode by the road, composed of flookan and granite, which looks promising. Here we expect lead shortly, and this end would be farther advanced, but the men have been sinking shafts on the other end, in order that it might be pushed on as fast as possible. Near the middle of the Moor, west of the road, we came in contact with the cross lode marked on the plan, and have since driven the adit southward on its course; it carries the strong gossan, with flookan, granite, &c., and lets out water freely; the gossan was especially strong at the intersection of the east and west lode by the road. The end is now 20 fms. south of the road, and 10 fms. south of a large flookan running east and west, which is strongly charged with mudstone, and is likely to favourably affect the lode in depth. Beyond this point we have not been able distinctly to trace the lode; but, as it appears to be thrown westward, we are now driving in a south-west direction, and daily expecting to reach it. The ground in this end has not recently been quite so favourable for driving as before, consequently we have not reached the middle east and west lode, which we expected to have done by this time, but it is yet some 15 fms. beyond us. On this lode, or near it, appears to be the place for the engine-shaft, as it is the central lode, and presents a fine back. The adit will come into it at a depth of 10 fms. from the surface. We shall drive on it at once to ascertain its character and drain off the water, and expect very soon to determine where to sink. We shall drive to the south lode and drain them while we open on this. From the commencement of the adit our utmost energies have been directed to the driving of it as fast as it could possibly be done; how we have succeeded will be seen in the fact that we have, besides the 40 cut open, driven underground 280 fms., 215 fms. of which have been driven in one end, besides sinking 50 fathoms of shafts. The water now being drained off by the adit is sufficient for a 12-in. lift, which shows that to attempt to sink with a horse-whim would have been useless. A great deal of expense is saved by preventing this water from going down into the mine, which would have followed us as we sunk, and the continued pumping of it would be a constant and increasing item of cost as the mine went deeper, and that the sinking of the engine-shaft can, without this additional water, be proceeded with a great deal faster; so that, besides the great saving effected, no time will eventually be lost. At surface we have erected a large and commodious carpenter's shop and sawing-house; a smith's shop, with two forges, and sufficiently large for all the men to change, and we are now building counting-house and store-room, and a place for the engine-house, and we shall require no further erections till the engine-house is commenced, for the building of which we have a quarry of excellent stone laid open in the set. There is nothing unfavourable to be ascertained from the appearance of quarry ground near the surface; but from what we see of the blue ground cropping out in different places there is no doubt that the quarry overlies the lead-bearing ground below, as it did in East Wheel Road,

where vast quantities of lead were broken beneath the quarry. The underlie and direction of the lodes, as well as the position and locality of the mine, are all that can be desired, while the continued richness of West Chiverton adjoining, and the very encouraging appearance of other lodes in the neighbourhood, afford the strongest assurance that we have a good mine before us here, which we shall use every effort to open up as fast as possible.—J. NANCARROW, J. GEORGE.

The CHAIRMAN said, by the reports just submitted the shareholders had been fully informed of the position and prospects of their undertaking. These reports were so detailed that they did not require any observations from him, for there could not be a divided opinion as to the intrinsic merits of the property. It was agreed on all hands that the one thing needful was capital to develop the admittedly valuable resources of the property, and, therefore, he hoped the shareholders, remembering that fact, would do their best to practically demonstrate to the world in as short a time as possible that in Great South Chiverton they possessed a property of no ordinary value. He concluded by moving that the agents' report and the accounts should be received and adopted.

Mr. WILLS had much pleasure in seconding the proposition. From a personal investigation of the property, he was satisfied that a great deal of work had been done at a small cost.—Mr. J. HARRIS considered that the meeting should have been called earlier.

Mr. W. LELAND said that the meeting had been deferred because it had been thought that a lode would have been cut.—Mr. WILLS was certainly of opinion that everything had been done that could be done to advance the company's interests.

The CHAIRMAN mentioned that he had been down to the mine, and was perfectly satisfied both as to the progress that was being made and as to the generally favourable prospects of the property; but for the satisfaction of some of his friends, he had written to Capt. Nancarrow, and, in reply, had received a communication, which he thought too good to be kept back, and, in reply, had read it to the meeting. The he did, as follows:—

Dec. 12.—I am glad to be able to state, in a few lines, the reasons for our present mode of working Great South Chiverton, and which may add, has been approved of by respectable mine agents who have seen it. When we first discovered the lodes, we tried to sink in several places, but everywhere met with water at depths of 1, 2, and 3 fms. In one place, by working the men all the time, we sunk a little over 4 fms., at which point the water kept the men constantly drawing, so that we could sink no further. None of these trials showed enough of the lodes to determine where to sink an engine-shaft, for the richest lodes are not productive in all places, nor do they in many places present even a promising appearance; and in some rich mines there is but little ore found near the surface, and the bunches of ore very short. Even in West Chiverton itself there was, I believe, only one bunch of ore seen in the adit, and that only 9 or 10 ft. long, although there is so much below; so that if our ground be as rich as West Chiverton, and we had sunk without seeing more of the lodes, there are many chances to one that we should have sunk where we ought not. My long experience in the district assured me, that to sink with a horse-whim was impracticable. It has been since tried in Chiverton Moor Mine (close by us), and the utmost depth that could be reached was 7 fms.; but our adit is 10 fms. deep, with more water coming from it than could be drawn by three whims. Besides, this water is now effectually drained off, which would otherwise have gone down into the mine, where it would have hindered our sinking, and the pumping of it would have been a constantly increasing expense. I trust these reasons are satisfactory. He said he would sink as soon as possible, and I think the time is not far distant. JOHN NANCARROW.

The reports and accounts were unanimously received and adopted. The committee of the directors elected for the next three months were Sir William Smith, Bart., and Messrs. Henry Willis, Albert Milsted, B. Weston Welles, and William Leland. It was unanimously resolved that the thanks of the meeting be accorded to Capt. John Nancarrow and Capt. John George, with confidence in their mode of working.

A vote of thanks to the Chairman terminated the proceedings.

#### WEST CARADON MINING COMPANY.

A general meeting of shareholders was held at St. Helen's-place, on Wednesday.—Mr. RICHARD HALLETT in the chair.

Mr. W. J. LAVINGTON read the notice convening the meeting, and the minutes of the last were approved.

A statement of accounts for four months (ending with costs for Oct.) was submitted, from which the following is condensed:—

Mine cost (July to October) .....	£3613 14 9
Merchants' bills .....	888 15 6
Dues .....	201 3 3
Interest and account .....	5 7 6=
Copper ore sold (September and October) .....	3216 10 1

Leaving debit balance .....

The general balance-sheet showed a balance of assets over liabilities of 318l. 12s. 3d.

The report of the agents was read, as follows:—

Dec. 12.—We beg to submit the following as our report, containing the objects in view, as well as the present prospects of the mine:—The ground in Elliott's engine-shaft still continues hard, consequently the progress is slow, however we have nine men engaged sinking the same, and we shall still continue to force it down as fast as possible until it reaches the 175, which will be the point where the lode is intersected, we anticipate of meeting with something good. The 155 west, on Allen's, or main lode, is within 7 fms. of a cross-course, when reached we shall then be in a position to cross-cut to intersect Vivian's, Downing's, and other lodes. The 104 west, on Jope's lode, for the whole distance driven (17 fms.) being through tribute ground, and we are now putting up a rise in the back close to the end for the purpose of ventilation, and when communicated to the tributaries' workings this place or ground can be worked to a much greater advantage, and the adit again resumed. We are making rapid progress in clearing the 128 fm. level cross-cut, south of Foxe's shaft, in the cross-course, and have cleared and secured already 57 fms., which is within 30 fms. of Jope's lode; although we have other lodes before us, our main object is to reach Jope's lode to get under the tribute ground referred to above. In the 92 west, on Vivian's south lode, we have driven through several fathoms of good ore ground, worth from 2 to 3 tons per fm. The present end still having a good appearance, and as Hallett's cross-course is about 8 fms. ahead of us, we are of an opinion this end will be ore for the whole distance. The 90, or midway level, stated in our last two-monthly report, is suspended, and we are now working the back and bottom by tributaries. In the 60 west, on Vivian's south lode, we are breaking occasional stones of copper ore, and we are looking forward for a change for the better as we approach towards Hallett's cross-course; our reason for such is seeing what has taken place about this cross-course referred to the 92, and we see no reason why similar results may not follow here. In the 50, west of Hallett's shaft, on Menadue lode, we are getting under the tributaries' workings in the level above, and shall shortly put up a rise to communicate with the same. In the 38, west of Hallett's shaft, on Menadue lode, we have cross-cut and intersected the south part of the lode, and are now opening out on the same, which is 1 ft. wide, spotted with copper ore. We have recently commenced to drive on a branch which is midway between Menadue and Vivian's lodes, although it is in the influence of the cross-course we are breaking good stones of ore. In conclusion, you will perceive by this report, that we are pushing on as fast as possible on all our different lodes, although not rich at present we are of opinion will improve, and in addition to these ends we are driving important cross-cuts at the 38 to cut Pryor's lode; also at the 92, south of the main, or Allen's lode, to cut Jope's lode, and other lodes as well; clearing the 128 fm. level cross-cut, south of Foxe's shaft, to get 24 fms. deeper under Jope's lode, which is all in the whole ground the entire length of the set. We are sinking Elliott's shaft as fast as the nature of the ground will admit, and is now down 12 fms. below the 155; when down to the 175 we expect at this point Vivian's and the main, or Allen's lodes, will unite together, and we consider the chances no ordinary speculation. We have pointed out to you the objects in view, and the objects in view, and we have pointed out to you that there is no better plan than can be adopted for the future practical working of the mine, believing, as we have before expressed, that when these points of interest are properly proved it will result in success.—WM. JOHNS, R. TRATHEN.

The CHAIRMAN said that before proceeding to the consideration of the report and accounts, it would, perhaps, be better for him to refer to the course the committee had adopted since the last meeting. As soon as he (the Chairman) heard of the lamented death of their late secretary (Mr. Dunford), he immediately proceeded to the office, and examined the books of the company and the banker's book, the whole of which, he was happy to say, were found in order and perfectly correct, and the accounts duly posted up. Upon such an emergency it was imperatively necessary that some qualified person should be appointed to take charge of the company's affairs, and accordingly Mr. William J. Lavington, who was well conversant with mining accounts, was appointed (*pro tem.*) to the vacant office. The manager (Capt. Johns), as well as the purser, came to town, when the committee took the opportunity of considering if any reduction could be legitimately made in the general working of the mine, which resulted in the reduction of the salaries of the staff of some nine guineas per month. As regards the mine, he (the Chairman) found upon conversation with Capt. Johns, whom he had known for several years as a most reliable and trustworthy agent, that it was not desirable to reduce the tutwork operations, because by so doing they would lessen the chances of making a discovery. Captain Johns considered that the general prospects of the mine were incomparably better than they were a few years since, before the payment of dividends was resumed, and that not the least important point was the reaching of the junction of the two lodes at the next deepest level, when they would know whether West Caradon was again to be a rich mine or otherwise.

Mr. NICHOLSON did not consider the committee were altogether justified in adopting the course they had without the consent of a general meeting of shareholders. His opinion was that the first duty of the committee was to call the shareholders together, so that they might have a voice in the election of their future secretary.

Mr. RICHARD HAWKE suggested that the 50 shares in the Caradon and Looe Railway, the property of the West Caradon Mine, should be sold by public auction. After some discussion, upon the proposition of Mr. R. HAWKE, seconded by Mr. NICHOLSON, it was unanimously resolved that the committee be authorised to dispose of the said shares. The CHAIRMAN then proposed that a call of 2l. per share should be made.—Mr. E. COCKE seconded the proposition, upon the ground that it was at all times desirable to have a sufficient cash in hand to meet all requirements. As for the next five or six months they must look forward to the incurring of a heavy loss, calls in proportion must be made.—A call of 2l. per share was made.

A SHAREHOLDER submitted a proposition that the qualification for a member of the committee should be 15 shares.—Mr. PETER WATSON could not see the value of a qualification, inasmuch as at each general meeting the committee retired, and the shareholders could elect whomever they thought fit. A proposition was put and carried, that the qualification for a member of the committee should be 15 shares. The motion upon being put to the meeting was lost.

Upon the question of the re-election of the committee, Mr. Richard Hawke was elected by the meeting to allow himself to be appointed a member, but he declined to accept the office, when Messrs. Hallett, Nicholson, and Bradley were appointed. A vote of thanks to the Chairman terminated the proceedings.

#### WEST WHEEL VOR MINING COMPANY.

A special general meeting of shareholders was held at the offices of company, Austinfriars, on Monday.

Mr. WILLIAM GUNDY in the chair.

Mr. J. H. MURCHISON (secretary) read the notice convening the meeting.

The CHAIRMAN said that the object for which the shareholders had been called together upon the present occasion was set forth in the notice just read; but, before submitting the proposal which the committee had prepared, he might mention that about a week since Capt. Thomas Richards had called upon him and Mr. Gundry, calling the West Wheel Vor Company the set known as West Wheel Metal, for the year 1864, and the expenses of the lease. There could not be a divided opinion that addition of this ground to the present West Wheel Vor set would prove a most important acquisition, and materially enhance the value and general prospects of the set. It would, perhaps, be remembered that some short time since a controversy had taken place between the promoters of West Vor and West Metal as to the direction of the Great Vor boundary. Without wishing to re-open that question, or to refer to comparative merits of the two sets, he might state that if the proposed offer was accepted it would altogether remove any doubts so far as the present company was concerned, because possessing both sets the Wheel Metal lode could be worked wherever it was found within the limits of the two sets. There was no doubt that West Metal lode was in West Wheel Vor set; but, at the same time, by the addition of West Metal that lode could be developed to a considerably greater extent.

Mr. F. MANVELL, fully coinciding with the desirability of acquiring the West Wheel Metal, and especially when it could be acquired for such a nominal amount as stated by the Chairman, enquired its extent?—The CHAIRMAN said that it was 400 or 500 fms. wide, and 400 fms. long. It was immediately contiguous to West Vor, and adjoined the Wheel Metal part of Great Vor to the west.

Mr. WHEAT enquired the probable cost of obtaining the lease?—The CHAIRMAN thought they would not exceed 80l. or 90l.

The SECRETARY, in reply to questions with regard to the financial position of the company, stated that at the general meeting held last month there was an available balance amounting to 1150l., but since then one cost-sheet had been paid. He further mentioned that the agents did not expect that henceforth the monthly cost-sheet would be paid. Mr. GUTRIER reminded the meeting that the new engine and ample plant had been paid for, so that the future outlay would be in the development of the mine.

A resolution was unanimously passed authorising the committee to accept the offer upon the terms stated.—A vote of thanks to the Chairman terminated the proceedings.

#### TRUTH'S ECHOES, OR SAYINGS AND DOINGS IN MINING.

The Mining Share Market continues to improve, and a fair amount of business has been transacted. The enquiries for leading mines are fully maintained, and the result in large transactions. The customers' fortnight account took place on Thursday, the preparation for which and the settlement, as usual, interfering with general business, consequently a more buoyant market may be looked for during the current account.

WHEEL SETON and WEST SETON have been in fair demand, and some transacted. CLIFFORDS are freely dealt in, and maintain their prices.—EAST RAIL has been fluctuating, but several shares have changed hands.—WHEEL BASSETS are in request at advanced rates.—NANGLES are apparently firm at present quotations.—CROFT has been dealt in at quoted prices.—EAST CARR BREAS have been in demand, but without any corresponding advance in price.—CARADON YANS are required for at minimum prices.—CARR CAMBORNS are offered more freely at figures.—GRANDLER and ST. ARN have been in fair request.—GREAT LAYTONS continue to be freely sold, and several transactions reported.—EAST GRENVILLES have been daily dealt in, but left off at reduced prices.—WHEEL GRENVILLES have been in minimum figures.—NORTH TREKERRYS continue inactive at present quotations.—NORTH ROSEKAR and NORTH CROFT have also been quiet this week.—EAST UNITHS have changed hands at fair market prices.—BOCAWNS have been dealt in at nominal prices.—HALLENHAGLES are enquired for, and business done at present prices.—NORTH SKEPHTONS have been in good request, and freely dealt in.—MANTON are in good demand, and a large number of shares have changed hands at quoted prices.—In consequence of the recent important discovery.—WEST CHIVERTON and CARR have been rather quiet this week.—WENTWORTH have been dealt in.—EAST LOVELLS have shared freely in the transactions of the week, and, notwithstanding the fluctuations, have a strong tendency to improve.—GREAT EAST LOVELLS continue firm at present prices.—GREAT WHEEL VORS are in daily request, and numerous dealings being reported.—EAST VORS have been less active this week.—SOUTH LOVELLS are firm and in active demand at present prices.—PROVIDENCE shares find buyers at market rates.

EAST CARADONS are daily dealt in, but have slightly varied.—MARKET VOR firm at improved rates.—WEST CARADONS are offered at lower figures.—TRELLAS sought for at minimum prices.—NEW MARTHA and KELLY BRAY have been in demand, and appear firm at quoted figures.—EAST WHEEL RUSSELLS have fluctuated, but quiet.—CROBENS are rather firm at present rates.—LADY BERTHAS have been in demand, and considerably advanced in consequence of recent improvements.—FRANK have been enquired for, and freely dealt in at improved prices.—NORTH DEVONS have been rather freely at nominal prices.—LADY BERTHA is reported to have further proved in the new shaft, sinking below the 40. The lode is reported to be yielding 4 to 5 tons of ore per fathom. From this place to the surface is full 60 fms., and in whole ground great results are anticipated. There are several other points to operations are being directed, especially east of the great cross-course, where important discoveries are fully expected.—KELLY BRAY continues to hold out very good prospects of further improvement, especially in the 60 cross-cut north, where it rapidly approaching the lode, and the 70 east, at which points some discoveries are for. The 25 east is looking very promising, the lode being large and strong. The mine sinking below is still worth 50l. per fm., and improving in value. The West Seton lode is slightly improved in one of the cross-cuts in the 162, and is doing some good work for copper. They will shortly sell about 200l. worth of copper and a small parcel of tin, about 100l. worth.

NORTH DEVON continues to look remarkably well, and the more the lodes are explored, greater encouragement is offered, and leaves no doubt but the mine will be permanent and productive one. The lode in the back of the adit is worth from 10l., and the stope below is worth full 14l. per fathom. The holding of the mine has opened some excellent lead ground, which can be taken away at a small price. The new shaft, sinking below the 40, is doing some good work for copper. The mine below the 10, on the caunter, has been worth 80l. per fathom, but not working on the best portion, which is worth 60l. per fathom. The caunter yet been intersected in the 20. The mine below the 20, on the middle lode, is still at 30l. to 40l. per fathom, and improving. There are several other points, the usual quantities of lead, and the opening of the caunter in the adit, and the level is likely to further increase the returns, which are now upwards of 80 tons per fathom.

MAUDLIN.—The lode in the 70 fathom level end continues a splendid one of grey and yellow ore; it has been cut into about 4 feet, with no south wall, and so far as seen, at 100l. per fm. They have opened upon it east and west, and commenced a mine on the lode, worth 30l. per fathom, but the water rises to make any progress. The shaft will be returned to the 80; when completed, level under the ore ground, immense returns may be calculated on, should the down, of which there appears very little doubt. It is intended to sample about when the value of the ore will be ascertained. The present monthly cost is about 200l.

WEST CHIVERTON.—The main part of the lode in the 90 cross-cut is expected to be intersected. The water in the end has very much increased. The 50, on Jope's lode, is worth 20l. per fathom; the mine below the 80 is worth 100l. per fathom, and the mine below the 100 is worth 80l. per fathom. The 70 west of the 80, west of the 100, is worth 20l. per fathom; the 80 east, 30l. per fathom; Burgess's lode improved; all the other points of operation are looking well, and larger returns fairly anticipated. They sold, on Wednesday, 71 tons of silver-lead ore, at 20l. ton, and 70 tons of ditto, at 10l. 2s. 6d. per ton—141 tons, realising 2180l.

WENTWORTH CONSOL.—A very promising lode has been met with in the engine pit sufficient of its character has not yet been seen to report positively upon it.

EAST WHEEL LOVELLS.—No important change has taken place since last week. A new engine-shaft is not yet completed, the necessary work is going on, and the mine expected to be in a finished state by the end of next week. The south lode, 28, continues worth 90l. per fm., and the operations at Turpicks shaft are proceeding satisfactorily, the lode maintaining its value.—SOUTH LOVELL continues remarkably well; the recent discovery at the shaft, on the north lode, maintains value, the respective points being worth 25l. and 12l. per fm. for tin, and every appearance of further improvement.

HAVAN is represented as opening out remarkably well, and, considering the size of the operations at present, is yielding very good returns. The shaft, which was down to the 20, is improving, and now worth about 1 ton of lead per fm. in a very productive lode. In the eastern level they are sinking a mine 11 1/2 tons per fm., and there are three stories in the back worth 5 tons per fm. aggregate. The western end is valued at 1 ton, and in the deep adit end the prospect highly favourable for an important discovery.

From Mr. WILLIAM LELAND.—Two or three weeks have made difference in the condition of the Mining and Share Market. The prophets of not only turned out to be mere twaddlers, or tricksters, but are now—some of them congratulating the public on an escape from the panic they were so sedulously bringing about, and taking credit to themselves for having been the only people at the time of the impending danger. Impudence is, no doubt, a valuable quality in a professional juggler, but in those who take upon themselves the function of being public opinion and action in the investment of money it is not regarded with favour, and will certainly not be accepted as a substitute either for judgment or honesty. I take no credit to myself for the course which I have followed for five months past. I could see no good reason for a panic, unless it were about by the reckless statements and unscrupulous averments of many of our most heartily ashamed of their handiwork, and are trying to sink out of the position in which they placed themselves; and I stated my convictions and the reasons on which they rested, doing only what every man should do, as far as he is able, within his reach. We have now got a long way beyond the cry of panic, but not yet got into smooth waters. It would almost seem as if human nature, by some such adverse influences as those which produced the now long-continued ances and disorders in the natural world. Everything has been "out of joint," equilibrium of forces by which the atmosphere is preserved in a condition of rest, and all Nature is seen to smile, as if conscious of its bright and beautiful surroundings, has been disturbed, and we have had floods of rain, overwhelming tides, terrible ravaging extensive regions, and sweeping away immense aggregations of property, the effects are visible long after the causes have passed away. Similar disturbances in commerce and finance, when great and sudden changes take place, and long-existing relations—as the American war, which has stopped the flow of cotton which we obtained by the payment of very small sums of money, were settled for chiefly by commercial transactions between the two countries, driven us into fresh markets, where we have to buy at quadrupled prices for silver coin. Our new commercial relations are gravitating towards the same old ones had reached; but in the meantime the disturbing elements, which produce all their mischief at once, ever and anon show themselves in the form of a mercantile firm, or the suspension of a commercial house, while the continuation of a foreign loan prolongs the disturbance in our financial relations.



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**MINES.—Des 3: Pozo Ancho Mine: South Lode.—West of Engine-  
shaft:** Having had a supply of coals, we shall fork the water, and resume the driving  
of the 110, west of No. 138 winze, in a few days. The lode in the 95, west of No. 136  
winze, is very small, and the ground hard. The bull-engine will be put to work to-  
morrow, when the driving of the 61, west of Santana's winze, will be resumed. The  
lode in the 51, west of Crosby's shaft, has greatly improved, and is comparatively easy  
to drive, working 4 tons per fm.—**East of Engine-Shaft:** The 110, east of engine-shaft,  
will be driven on Tuesday next: the lode is small and poor. In the 95, east of No. 138  
winze, the lode is in a very small space, and is not worth driving. The 75, east of  
the lode in the 55, west of No. 134 winze, is very wide, and spotted throughout with  
clad. The 75, east of No. 141 winze, is opening out a productive piece of ground, worth  
10 ton per fm.—**North Lode:** The 85, east of No. 132 winze, is passing through a hard  
band of ground, similar to the one driven through in the 75.—**Shafts and Winzes:** The ground  
around Crosby's shaft is very wet and difficult to sink. San Jose shaft is going down in a  
very fine lode, working 3 tons per fm. No. 143 winze will be measured and re-set in a  
few days. The lode in No. 144 winze is large, and yields some large lumps of lead.  
No. 140  
The water is in fact all of one nature, the lode large, and of a very promising ap-  
pearance.—**General Remarks:** The ore dressing, and the surface work in general, is being  
carried on with its usual regularity. The new stopes set on at Warr's Mine are being

Notes: Having had a supply of coals, we shall fork the water, and resume the driving of the 110, west of No. 138 winze, in a few days. The lode in the 95, west of No. 136 winze, is very small, and the ground hard. The bull-engine will be put to work in a few days, when the driving of the 61, west of Santana's winze, will be resumed. The lode in the 51, west of Crosby's shaft, has greatly improved, and is comparatively easy to drive, worth 4 tons per fm. — East of Engine-Shaft: The 110, east of engine-shaft, will be re-set on Tuesday next: the lode is small and poor. In the 95, east of No. 138 winze, the lode is large, and chiefly composed of calcareous spar and stones of lead ore. The lode in the 85, west of No. 134 winze, is very wide, and spatted throughout with iron pyrites. The 75, east of No. 141 winze, is open to a productive piece of ground, worth 146 tons per foot. The lode in No. 132, east of Santana's shaft, has a hard, sandy, and ground, similar to the one driven through in the 75 — Shaft and Winze: The ground west of Crosby's shaft is very wet and difficult to sink. San Jose shaft is going down in a very fine lode, worth 3 tons per fm. No. 143 winze will be measured and re-set in a few days. The lode in No. 144 winze is large, and yields some large lumps of lead. The 140 winze is situate east of the engine-shaft, in advance of the 110, and as soon as the water is in fork will be resumed: the lode is large, and of a very promising appearance. — General Remarks: The ore dressing, and the surface work in general, is being carried on with its usual regularity. The new stones set on at Warr's Mine are field







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## MINING NOTABILIA.

(EXTRACTS FROM OUR CORRESPONDENCE.)

**GOLD IN WALES.**—At Hafod-y-Morfa, or Prince of Wales, Mine, it is reported that magnificent Gold has been found, in spots about 3 in. square. Another discovery is said to have been made at GWYNFFRYDD. The gold lode at CASTELL CARN DOCHAN is said to have improved very much the last week. Yield of Gold for the week 2 oss. 10 dwts. 7 grs., from 19 cwts. of quartz.

**SOUTH CONDURROW** continues to look well. On Wednesday next they sample about 20 tons of copper ore, about the same quality as the last. They have also about 5 tons of tin, which will be sold shortly. The mine is nearly paying cost.

**At WEST CONDURROW** the 26 fm. level cross-cut south has undergone a favourable change; the ground is much easier, and there is plenty of water coming out of the end, indicating that they are near the lode—the Carn Camborne south lode, which is looking so well in the west end, nearly adjoining West Condurrow. It is not too much to expect this mine to increase in market value soon. Many of the old miners in the neighbourhood are buying largely at the present low price, believing they have a prize before them.

**EAST POLMEAR (Charlestown).**—It is rumoured that this mine, which has been working for some time past to the full level only, where some important lodes and cross-courses have been intersected, and rich ore (copper) raised, is likely to be brought more prominently before the public in the ensuing spring, some influential parties in London and Cornwall being in negotiation with the present proprietors (a few in number), with a view to a full development of the numerous lodes already discovered, some of which are partially wrought on. The mine may be said to be virgin ground, as nothing has been done since its discovery. The locality is such as requires no comment—some of the richest copper mines in the county have been found in the neighbourhood, and it is raised here are far above the average of the county. For those who have so long laboured to test the mine at the present depth, for those who may join in the further prosecution of the work, and for the benefit of the neighbourhood in general, it is hoped success will be the result, and it is the general opinion, if worked spiritedly, it will be so.

**CAMBORNE Vean.**—An important discovery has been made in the 262 or bottom level, both in the east and west ends. About 5 cwt. of black tin was broken in one blast on Friday. This is an important discovery, and it is hoped that it will be permanent. The mine has been a long drag. Some are sanguine enough to believe it will one day be a second Dolcoath.

**At WHEAL SETON** meeting, on Monday, the usual 4½ dividend was declared, leaving a credit balance of 5541., or an increase of 791. from the last meeting. The report was exceedingly good, the aggregate of the different bargains being 101 tons per fathom. From present prospects, increased dividends are not far distant.

**EAST GRENVILLE.**—In last week's Journal your esteemed correspondent, Messrs. Watson and Cull, drew public attention to the prospects of East Grenville, mentioning the great dissimilarity in the opinions of two persons regarding the position of this concern; and, in a most concise manner, the public have shown them the relative values of those opinions. Whilst one, who has no motive for declaring a state of things other than exists, speaks highly of the mine; we learn that the kind friend James, who voluntarily offers advice, is a "bear" to a large extent—*ergo*, the property is poor. We leave it to impartial observers to draw their own inferences.

**SOUTH WHEAL LEISURE** is opening up very satisfactorily, some rich branches of copper have just been driven through, and they are already expecting to cut an important lode, which will considerably enhance the value of this property, which is now fully expected to be the great prize of the Chiverton district in 1865.

**SOUTH WHEAL CROFTY.**—The next meeting of shareholders will take place on Monday. Economy seems to be the order of the day in this mine, as well as in North Downs, as the ordinary dinners are to be discontinued. This is a step in the right direction, and is well worth following by other mines.

**TREWEATHA.**—Under date Dec. 15, Capt. Thos. Foote writes that in the engine-shaft they had that day broken some fine stones of lead, as fine as can be seen, and the lode looks very promising. Everything is being done for the future profitable working of the mine.

**LADY BERTHA MINE.**—As will be seen by the agent's report in another column, this mine has further improved. The lode in the new engine-shaft, sinking below the 41 fm. level, when last taken down, was reported as worth 181. to 201. per fathom; but we learn that it is of much greater value. This point is in whole ground to surface. A rich lode is also shortly expected in the 30, east of the great cross-course. Should this be the case (of which there is but little doubt), this mine will again attract some considerable attention.

**DALE MINE.**—Under date of December 15, Captain R. Nines writes that they have only been able to work on a part of the Pipe vein during the greater part of the last month. At the sampling, on Saturday next, he estimates having about 30 tons of lead and 35 tons of blende. The last sale of lead ore, on November 12, realised 6061. 2s.; and the blende sold the same day, 1861. 11s. 7d.

**EAST WHEAL VOR.**—From the improved indications on Smith's lode, in the 60 and 70 fms. level, and also sinking below the 70, on the rich Old Wheal Vor lode, there is no doubt a rich deposit of tin will be soon met with. This is the most promising progressive mine in the Great Wheal Vor district.

**At CARN CAMBORNE** the crusher is in, the house covered, and the crusher will be put to work on Monday next, for sampling on the Wednesday following, when they will sample 30 tons of good ore, nearly double the last sampling, and from the present prospects of the mine 120 tons may reasonably be expected at the next sampling. The mine has greatly improved, and promises to be one of the prizes for 1865. The report of this day (Wednesday) is as follows:—South Lode: 40 west, 1½ ton; 40 east, 2 tons; 30 west, 4 tons; 30 east, ½ ton; a winze in the 30 west, 5 fms.; behind the end, 8 tons.—New South Lode: 13 west, 2 tons; 24 west, a new level, stones of ore; western shaft, 1½ ton.—North Lode: 30 west, ½ ton; stopes in back of 30, 2 tons. Fifty fathoms of good ore ground have been opened in the 30, on the south lode, the same distance on the new south lode, which will be worked at a low tribute. With such prospects as these, what can prevent Carn Camborne being a prize in 1865?

It is to be regretted that NORTH ROBERT receives so little attention from the public at present, and that there are even attempts to injure the property, by exciting a prejudice against it. There are not many mines looking better than this—60 tons of copper will be sold next week, in a few days 10 tons of tin, which will realise 9001., and other sales will soon follow. There are two steam-engines on the mine, several large wheels, and, in fact, a plant worth several thousand pounds.

**At GRVILLS WHEAL FLORENCE**, the stamps will be at work in a short time, and good returns of tin will be made. The mine is well managed, and likely to be one of the triumphs of 1865. Amongst the officers are—Capt. Rogers, resident agent; Mr. Jehu Hitchens, secretary; and Mr. J. Y. Watson, treasurer.

**WEST MARIA AND FORTESCUE.**—On visiting these mines (adjoining Devon Great Consols) some few days since, I found a large amount of work had been done. A 58-hp cylinder-engine, with which for drawing, &c., erected, engine-shaft in fork to the 70, skip-road in 6 fathoms below the 50, and the men busily engaged clearing the shaft below this level. The Capel Tor lode has been intersected in the 20, cut into, and found to be about 5 feet wide, 3 feet reef throughout; they have now commenced driving east and west on the same, and a few days will ascertain its value. The 40 is being driven on the counter lode, which is producing good stones of yellow copper ore, showing indications of shortly meeting with a bunch of copper. This end will intersect the Capel Tor lode in about 20 fathoms, which in a few months will be opened on at various points for 136 fathoms in length on its course, and from the large rocks of copper to be seen at surface, taken from this lode at shallow levels, good and profitable results must follow, and place this mine as one of the great prizes of the coming year.

**EAST BROOKWOOD.**—This mine is progressing satisfactorily, and with every prospect of good success. The shaft is now down 20 fathoms under adit, and in the last 2 fathoms sinking they have intersected some branches dipping towards the lode, consisting of quartz and yellow copper ore. They intend sinking another fathom, when a cross-cut will be driven to intersect the lode, of which there is little doubt that when cut (from indications seen in the upper levels) they will be found highly productive for copper, which the shareholders will deserve for their perseverance and outlay.

**DESTRUCTION OF A STEAM-ENGINE.**—I have often wondered, when passing the South Bedford Mine, near Tavistock, why the steam-engine erected there should remain for years unused; it has never been worked, and the top of the chimney is not even discoloured. This surely is a great waste of money, more especially as no sales of copper have taken place. Will the purser or captain explain who ordered this engine, and by whose authority it was erected?—MINER.

**THE MAUDLIN MINES.**—The notice of the discovery in these mines, which has been exciting so much attention and interest throughout the county of Cornwall, turns out to have been rather under than over estimated—we mean, of course, the richness of the lode cut into in the 70. An analysis of some five or six samples of the ore was, last week, stated to have given an average of 27 per cent. of copper; we have this week seen the results of an analysis since made by Messrs. Johnson, Matthey, and Co., of lumps of the ore taken up by some private gentlemen, who visited the mines, wishing to form an independent judgment, and to test the accuracy of the reports that had got abroad; and it gives the proportion of 39.50 per cent. as the average. It is as satisfactory to be enabled thus to certify to the validity of the statements made, as to be able to congratulate the proprietors on the good fortune into which they have fallen.

**MINING IN CALSTOCK.**—In another column will be found reports of Okel Tor Mine (Calstock), from which it appears that there is a good course of ore laid open between the 50 and 65 fm. levels, the returns from which must improve the position of this mine from paying costs to making handsome profits; and as the other points of operation are of a most satisfactory character, the concern is confidently expected to take an early and important place in the list of Dividend Mines.

**GREAT SOUTH CHIVERTON.**—It will be seen from the reports presented at the general meeting (which appear in another column) that the development of this property is progressing in a satisfactory manner. The position of the mine, immediately adjoining West Chiverton, is not unreasonably regarded as a feature of no mean importance—upon this point Capt. J. Nancarrow remarks that "the underlie and direction of the lodes, as well as the position and locality of the mine, are all that can be desired, while the continued richness of West Chiverton adjoining, and the very encouraging appearance of other mines in the neighbourhood, afford the strongest assurance that we have a good mine before us here which we shall use every effort to open up as fast as possible. It would appear, therefore, that Great South Chiverton possesses everything that can be desired as regards prospects and locality, as well as facilities for development; and by the judicious expenditure of a small amount of capital there seems reason to hope that success will be ensued."

**FATAL ACCIDENT AT DEVON GREAT CONSOLS.**—On Wednesday, T. Stephens was killed, and Thomas Richards had his thigh broken and was otherwise injured, by a fall of ground.

**TO CONTRACTORS—RHYL PROMENADE PIER COMPANY (LIMITED).**—The Directors are DESIROUS OF RECEIVING TENDERS FOR THE ERECTION OF AN IRON PIER INTO THE SEA AT RHYL, 1056 yards long. Plans and specifications may be seen upon application to Mr. W. WYNN, the secretary, Belvoir Hotel, Rhyll. The contractor will be required to take a portion of the amount of his contract in paid-up shares of the company. The directors do not bind themselves to accept the lowest or any other tender.

**TO CAPITALISTS.**—THE LESSEE OF A FIRST-RATE COLLIERY IN NORTH WALES WANTS A PARTNER, with about £2000. A mining engineer practising colliery management might have the management. A profit of 4s. per ton can be clearly shown on the coal raised in the royalty, which is an extensive one.—Address, "Bryn," care of Mr. H. Greenwood, advertising agent, Liverpool.

**TO LANCASHIRE COLLIERY PROPRIETORS.**—WANTED, AN AGENCY FOR THE SALE OF A GOOD QUALITY LANCASHIRE COAL. Advertiser has a first-class connection amongst the largest consumers in Liverpool.—Address, "E. G.," Journal of Commerce office, Liverpool.

**WANTED, A COLLIERY STEWARD.** One who is capable of TAKING THE DIRECTION, MAPPING, AND LAYING OUT EXTENSIVE UNDERGROUND WORKS.—Application, with reference, to "K," care of Mr. Morgan, news agent, Bradford.

**WANTED, AN UNDERVIEWER FOR AN EXTENSIVE COLLIERY.**—Written applications, enclosing testimonials, and stating age and references, to be made to Mr. P. COOPER, Manager, Holmes Colliery, Rotherham.

**AN UNDERGROUND AGENT WANTED FOR A LEAD MINE** IN THE NORTH OF ENGLAND. The applicant must have had good practical experience, and should be under 40 years of age.—Address note, with testimonials enclosed, to Mr. J. R. EDDY, Carleton Grange, Skipton, Yorkshire.

**AN OPPORTUNITY OFFERS OF INVESTING, under very favourable circumstances, in A VALUABLE MINE, just approaching development. Persons with £1000 to £2000 spare cash will find this well worth attention.**—Address, "A. B.," Kennedy and Co., advertising agents, Manchester.

**CENTRAL RAILWAY OF VENEZUELA (LIMITED).**—GUARANTEED INTEREST 11¼ PER CENT.—FIFTY SHARES (£10 paid) FOR SALE, or will be EXCHANGED FOR QUEBRADA or OTHER SHARES.—Address, "M. P.," care of Mr. Barker, news agent, 1, Castle-court, Birch-lane, Cornhill.

**RHOSMOR MINE—IMPORTANT TO ADVENTURERS.**—ON SALE, SIX SHARES (6 64ths) OF THE ABOVE VALUABLE MINE.—Apply by letter (post paid), or personally, to Capt. ELLIS, Rhosmor Mine, Halkyn, near Holywell.

**NEW CLIFFORD MINING COMPANY (LIMITED).**—An advertisement having appeared in the MINING JOURNAL of the 10th instant, signed Charles Bawden, St. Day, Cornwall, cautioning the public against taking shares in this company, and stating that he is the proprietor of one-third of the property, I certainly trust that the shareholders will not be alarmed by this attempt on the part of a man (who is now having his affairs adjudicated in the Bankruptcy Court at Redruth) to lay claim to a property of which he has not, nor ever had, the least title or claim. 9, Gracechurch-street, London. Signed, JOHN GREEN, Sec.

**NOTICE—LATE WHEAL ANNIE MINE, IN THE PARISH OF ST. AUSTELL.**—ALL PERSONS HAVING CLAIMS ON THE ABOVE MINE will be pleased FORTHWITH to SEND THE PARTICULARS thereof to the pursuer, William West, Esq., Tredernham House, St. Blazey; and ALL INDIVIDUALS INDEBTED TO THE COMPANY are REQUESTED TO PAY what they owe, WITHOUT FURTHER DELAY, to the said William West.—Dated Dec. 15, 1864.

**CATHERINE AND JANE MINE.—SHAREHOLDERS** are REQUESTED TO APPLY during the ENSUING WEEK, between the hours of Twelve and One o'clock, personally or by letter, at the office of the late Mr. Dunsford, 2, Broad-street-buildings, London, TO RECEIVE THEIR PROPORTION OF ASSETS IN THE WINDING-UP OF THE ABOVE MINE. By order of the Committee of the said Catherine and Jane Mine. Dated December 16, 1864.

**CARYSFORT MINING COMPANY (LIMITED).**—Notice is hereby given, that the ORDINARY HALF-YEARLY MEETING of the Carysfort Mining Company (Limited) will be HELD on MONDAY, the 23d day of January, 1865, at the hour of Twelve o'clock noon, at the office of the company, No. 65, Dame-street, Dublin, for the purpose of submitting the directors' report and statement of accounts, for the half-year ended the 31st Oct. last; and for the transaction of the other ordinary business of the company. By order, W. R. FAYLE, Sec. 65, Dame-street, Dublin, December 16, 1864.

**MR. J. P. ENDEAN, STOCK AND SHAREBROKER,** 1, CROWN COURT, OLD BROAD STREET, LONDON, E.C. Having had 25 years' experience in the mining districts of Devon and Cornwall, and three in the London market, with daily information of important changes from qualified agents, also the most authentic reports relating to other investments, he is in a position to afford the earliest information to his clients, and to direct capitalists whether to buy or sell in mines, railways, or other securities. Investors should apply to him for reliable information relative to the Chiverton Mines, also the Camborne and Illogan districts. A carefully selected list of sound progressive and dividend shares (certain to give a large percentage immediately) forwarded on receipt of 5s. in stamps. Orders and telegrams receive immediate attention.

**MR. J. W. GILBERT, MINE SHAREDEALER,** 1, PINNER'S COURT, OLD BROAD STREET, LONDON.

**THOMAS MOLYNEUX AND CO.** (Late LEIGH, MOLYNEUX, & Co.) MINE AGENTS, SHAREBROKERS, AND GENERAL COMMISSION AGENTS. SHARES OF EVERY DESCRIPTION BOUGHT AND SOLD on commission, or otherwise. Especial attention is given to buying and selling mining shares. The latest information can be given as to present prices and prospects, which they are enabled to give by daily communication with their agents in London, Devon, Cornwall, Ireland, and Wales. Mines inspected and reported upon by experienced agents, and reliable information given as to mining property.—Address, THOMAS MOLYNEUX AND CO., No. 28, Princess-street, Manchester.

**MR. W. HANNAM, MINING, SLATE QUARRYING, INSURANCE, AND GENERAL SHAREBROKER,** ROYAL INSURANCE BUILDINGS, KING STREET, MANCHESTER. A Monthly Investment Circular on application.

**MR. D. STICKLAND, M.E.,** having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon. MINES INSPECTED AND FAITHFULLY REPORTED ON. DEALER IN MINING, RAILWAY, AND OTHER SHARES. His monthly Circular forwarded on receipt of six postage stamps. All communications with the Coal and Iron districts to be addressed Padstow, Cornwall. Wellington Chambers, 75, Cannon-street West, London, E.C.

**HARRIS AND CO. STOCK AND SHAREBROKERS, AND FINANCIAL AGENTS,** 15, GEORGE STREET, MANSION HOUSE, LONDON, E.C. HARRIS and Co. having (in addition to their usual business in stocks and shares generally dealt in on the London Stock Exchange) made special arrangements for transacting every kind of business in the Stock and Shares of Mines, Ironworks, and other Industrial Companies, are prepared to effect, at the closest prices, purchases or sales of such stock on commission. As they transact a purely commission business, they are prepared, in every case, to give the names of principals. In transacting their business HARRIS and Co. beg to state that they make it a rule not to be themselves connected with any concern as promoters, or placers of stock; they endeavour to make themselves acquainted with every available information on the intrinsic merits of all stocks, but avoid identifying themselves with any particular undertaking.

With respect to stock in mines and ironworks, HARRIS and Co. have made arrangements to secure the very best and earliest information that can be had from the seats of operation. In the metallic mining districts of Cornwall and Devon, Wales, Shropshire, and the Isle of Man, of the Midland Counties, of Yorkshire and the Northern Counties, and of Ireland, they have agents and correspondents among the best-informed persons. They also have full and special information of all facts affecting the interests of every company connected with the Coal and Iron districts. HARRIS and Co. have correspondents in New York, Boston (U.S.), Halifax (Nova Scotia), Philadelphia, San Francisco, Melbourne, and Adelaide, by which they are in a position to buy and sell American and Australian stocks for European buyers, or European stocks for American or Australian buyers, on unusually advantageous terms. HARRIS and Co. issue a monthly circular to their clients, which, for the convenience of their foreign and colonial correspondents and customers, is registered at the Post Office for transmission abroad.

**ELFORD, WILLIAMS, AND CO.** COPPER ORE WHARFINGERS, METAL AND GENERAL COMMISSION AGENTS, SWANSEA.

**ASSAYS AND ANALYSES.—MR. JOSEPH GREEN,** for the past 14 years professional assayer to the Chester Goldsmiths' Company, UNDERTAKES THE ASSAYING AND ANALYSIS OF EVERY DESCRIPTION OF MINERAL.—Assay Office, Chester.

**ISAAC FRANCIS, NANT, WREXHAM,** a dresser of 30 years' experience, is OPEN TO INSPECT ANY DRESSING PLACE on moderate terms. Mr. Francis can introduce PLANS OF IMPROVEMENTS that will SAVE THIRTY PER CENT. COST in certain departments of any dressing floors.

**MR. BRENTON SYMONS INSPECTS AND REPORTS ON** ANY MINERAL PROPERTY. In all cases where procurable a plan will accompany his report.—18, Hatton-garden, E.C.

**MR. GEORGE HENWOOD, MINING ENGINEER,** LOCHHEAD HOUSE, LOCHWINNOCH, SCOTLAND, OFFERS HIS SERVICES AND ADVICE ON mines situated in any part of England, Scotland, Wales, Ireland, Isle of Man, &c. Mr. Henwood's extensive experience in his peculiar department of mining science is well known, and will be exerted to the utmost for the benefit of his clients.

\* With last week's Journal a SUPPLEMENTAL SHEET was given, which contains—Papers on Slate and Stone Quarrying Machinery; Life and Death in the Mines; England's Early Engineers; Copper Mining—Devon Great Consols; Ore Crushing and Washing Machinery (illustrated); Utilising Small Coal, and Refuse Tinned Iron; Remarkable Steam-Boiler; Petroleum; Reports from various Foreign Mines; Quarterly Sales; Miscellaneous Scientific News, &c.

**MUNTZ, E. G., METAL BROKER,** 32, PARADISE STREET, BIRMINGHAM.

## The Mining Market; Prices of Metals, Ores, &amp;c.

METAL MARKET—LONDON, Dec. 16, 1864.			
COPPER.			
Best selected....p. ton	92 0	s. d.	s. d.
Tough cake.....	88 0	0	95 0
Sheets.....	88 0	0	90 0
Wire.....	88 0	0	90 0
Old (Exchange).....	91 0	0	—
Copper wire.....p. lb.	0	1	0 10 3/4
ditto tubes.....	0	1	—
Sheeting & bolts p. ton	95 0	—	—
Bottoms.....	104 0	—	—
Old (Exchange).....	91 0	—	—
IRON.			
Best Welsh, in London....	7 12	6	7 15 0
ditto, to arrive.....	7 12	6	—
Mail rods.....	8 10	0	—
" Stafford, in London.....	9 2	6	10 5 0
Bars ditto.....	9 0	0	11 0
Hoops ditto.....	9 17	6	10 10 0
Sheets, single.....	10 12	6	11 0
Fig No. 1, in Wales.....	4 10	0	—
Refined metal, ditto.....	4 0	0	5 0 6
Bars, common, ditto.....	4 18	0	7 0 0
Do, merchant, Tyne or Tees.....	7 15	0	8 0 0
ditto, railway, in Wales.....	6 15	0	7 0 0
ditto, S.W., in London.....	11 10	0	—
To arrive.....	11 10	0	—
Fig No. 1, in Clyde.....	2 11	0	2 17 0
ditto, f.o.b. Tyne or Tees.....	2 9	6	—
ditto, Nos. 3, 4, f.o.b. do.....	2 6	6	2 5 6
Railway chairs.....	5 10	0	5 15 0
" spikes.....	11 0	0	12 0
LEAD.			
English Fig, ordy. soft.....	20	10	0
ditto (WB).....	22	0	0
Ditto sheet.....	21	0	21 5 0
Ditto red lead.....	22	0	0
Ditto white.....	26	0	26 5 0
Ditto patent shot.....	23	0	23 10 0
Spanish.....	19	0	—
BRASS.			
Sheets.....	9 4	0	—
Wire.....	9 4	0	—
Tubes.....	9 4	0	—
STEEL.			
Swedish, in kegs (rolled) 15 10 0-15 16 0			
(hammered).....	16	0	0-18 0 0
Ditto in fagots.....	17	0	0-18 0 0
English, Spring.....	19	0	0-23 0 0
Bessemer's, Engineers Tool.....	44	0	0
" Spindle.....	80	0	0
QUICKSILVER (per bottle).....	8	0	0 nom.
SPELTEN.			
Foreign.....	20	0	0
To arrive.....	20	0	0
SING.			
In sheets.....	26	10	0
TIN.			
English, blocks.....	101	0	0
Ditto, Bars (in barrels).....	102	0	0
Ditto, Refined.....	106	0	0
Banca.....	93	0	0
Straits.....	89	0	0
TIN-PLATES.			
IC Charcoal, 1st qua. p. bx. 1 7 0-1 10 0			
IX Ditto 1st quality.....	1 13	0	1 16 0
IX Ditto 2d quality.....	1 5	0	1 7 0
IX Ditto 3d quality.....	1 11	0	1 13 0
IX Coke.....	1 7	0	1 8 2
IX Ditto.....	1 7	0	1 8 2
Canada plates.....p. ton	13	0	10 0
In London; 20s. less at the works.			
Yellow Metal Sheathing.....p. lb. 8d.-8 1/4d.			
Sheets.....p. lb. 8d.-8 1/4d.			
Indian Charcoal Figs.....	7	0	0-7 10
In London.....			
At the works, 1s. to 1s. 6d. per box less.			

**REMARKS.**—It is with great pleasure we are enabled to record that on Thursday the directors of the Bank of England reduced the rate of discount to 6 per cent. This reduction will give universal satisfaction, not only as a proof that the monetary crisis, which has so hampered commercial operations, is now over, but also because it will tend to the restoration of confidence, the want of which is so detrimental to business; and likewise because merchants will now be enabled to enter into commercial transactions without fear, as the present rate of discount is one that can be met without any difficulty. We are glad to find that the anticipations expressed in the *Mining Journal*, that easier rates would ensue before Christmas, have been verified, and we may now congratulate our numerous readers upon the pleasing prospect opened for the new year. Of course we cannot expect at this period of the year that the metal trade will show any very marked improvement consequent upon the present reduction in the Bank rate, but we have no doubt that very soon its influence will be felt, and we shall see a considerable improvement in the Metal Market. Prices will become firmer; orders which have been kept back will be brought forward, and a vigorous and healthy tone again become the characteristic of the trade.

**COPPER.**—The market is not quite so firm as it was last week; sales have not been very numerous, and unmanufactured has been sold at 88½.

**IRON.**—In Staffordshire the demand for finished iron does not show any improvement, with the exception of sheets for galvanising, and for no important kind is there sufficient demand to keep the works fully employed. The second-class makers are accepting prices below the trade rates, which are themselves very low in relation to the rate of wages, and the necessity of grappling with this question is now felt to be imperative. A special meeting of the Ironmasters' Association is to be held next week to consider the question, and the decision of that meeting is looked forward to with great interest. In Welsh ironworks are, upon the whole, regularly employed, and there is no change of importance to notice. Several of the leading makers are beginning to complain that orders are getting scarce, and unless the requirements of buyers increase, it is evident that a reduction in price is not improvable. Only a small quantity of iron has of late been shipped to New York, and there does not appear any immediate prospect of a revival of the trade with America. The home demand is moderately good. In Swedish iron no alteration has occurred. In Scotch pig-iron the market has still continued to decline during the week. At the commencement of the week prices fell to 50s. 4½d. cash, but did not long remain at this, falling to 50s. 3d. cash, and 50s. 7½d. one month, at which it remained at the close, the reduction in the Bank rate not having exercised any influence upon the market.

**LEAD.**—The demand still continues moderate, and prices may still be quoted at 20½s. for common English pig, 20½s. 10s. for LB, and 22½s. for WB per ton.

**TIN.**—The market for foreign remains in a drooping condition, and prices have continued to decline during the week, and there appears little prospect at present of any immediate recovery. Sales of Banca have taken place at 93½, and Straits at 89½ cash.

**SPELTEN.**—The sales of this metal during the week have been very small, and the tendency of the market is decidedly downward, while the stoppage of a firm largely dealing in the article tends further to depress the market. Sales have been effected at 20½ on the spot.

**STEEL** still continues without animation of any kind.

**TIN-PLATES.**—There has been no accession of orders of any importance during the week. Coke may now be bought at 2½s. 9d. per box.

**QUICKSILVER.**—No particulars to notice.

**GLASGOW, DEC. 15.**—The market to-day has been quiet, but steady. Business done at 50s. 3d. cash; closing, sellers, 50s. 3d. cash, prompt; buyers, 50s. 1½d. No. 1, g.m.b., 51s. 3d.; No. 3, 50s. 3d.

**THE TIN TRADE.**—We are favoured by Mr. L. Th. Van Houten, of Rotterdam, with the official return by the Dutch Board of Trade of the import and export of tin from Holland during Oct., and the ten months ending Oct.:

Oct. :—		Oct.		IMPORT.		Ten months.		Twelve months.	
		1864.	1863.	1864.	1863.	1863.	1862.		
From Java .....	Tons	291	Not	4614	Not	3458	5111		
" England .....		19	given	230	given	220	184		
" Other countries.....		2	separately	7	separately	22	7		
Total tons .....		312	305	4551	2849	3700	5302		
		Oct.		EXPORT.		Ten months.		Twelve months.	
		1864.	1863.	1864.	1863.	1863.	1862.		
To Germany.....	Tons	168		1606		1475	1825		
" Belgium .....		23	Not	413	Not	246	255		
" England .....		45		1286		649	1126		
" France .....		17	given	884	given	785	1116		
" Hamburg .....		12	separately	175	separately	147	154		
" America .....		57		378		368	259		
" Other countries .....		57		378		368	259		
Total tons .....		322	207	4743	3113	3674	5110		



Stocks of Chili copper, ores, &c., in first and second hands, likely to be available, as near as they can possibly be estimated, are as follows:—

	Ores.	Regulus.	Bars.	Barilla.
Liverpool .....	1968	535	2706	73
Swansea .....	2960	850	852	—

Quotations are 17s. to 17s. 3d. for ore and regulus, 82s. for bars, and 15s. 3d. for Barilla. Arrivals since my last have been:—

	Ores.	Bars.	Barilla.	Ingots.
"Bolivar," Colon .....	80	—	—	—
"Rosemont," Coquimbo .....	—	305	—	—
"Mexican," Colon .....	—	—	—	112
"Tamaya," Cobija .....	540	—	73	—
"Chanarillo," Cobija .....	597	—	44	—
"Arequipa," Valparaiso .....	—	20	—	—

In the state of the MINING SHARE MARKET there is nothing particularly new to notice. The settlement of the fortnightly account, on Thursday, however, was much heavier than for some time past, and showed the increased business transacted, both for speculation and investment, since December commenced. The chief demand of late has been for Great Laxey, Great Vor, Wheal Crebor, East Grenville, West Chiverton, Kelly Bray, Lady Bertha, Carn Camborne, North Roskear, South Wheal Leisure, Frank Mills, East Caradon, East Lovell, East Vor, North Chiverton, Grambler and St. Aubyn, and a few others. East Caradon shares have been firmer, and leave off 19½ to 20½; the lode has not been cut in the 80 south, but the ground in the cross-cut continues favourable. Great Laxey, 18½ to 19½; a dividend of 10s. per share has been declared.

Great Wheal Vor shares are not so firm, a large dividend having been anticipated; they leave off 33½ to 34½. The accounts to be submitted to the shareholders at the general meeting, on Wednesday, have been circulated among the proprietors, and show tin sold in three months to October, 97967. 2s. 11d.; other credits, 202. 10s. 10d.; total receipts, 98167. 13s. 9d. Three months' costs to the end of Sept., 61147. 13s. 4d.; showing a profit on the quarter of 37027. 0s. 5d., equal to a dividend of 12s. 6d. per share, or 7½ per cent. per annum on the present price of shares. The mine sells about 50 tons of tin per month (148 tons 5 cwt. sold in the quarter), at a cost of about 2000l. per month, and a rise of 10l. per ton in tin would add 5000l. per month to the profits, while a fall would sensibly decrease them. During the quarter 100 fms. 5 ft. 4 in. of ground have been sunk and driven; 20307. 7d. paid for tutwork (task work), and 6297. 1s. 6d. for dressing tin; tribute, 647. 3s. 2d. The quantity of coals used in the quarter, 835 tons, at 12s. per ton for common, and 18s. 4d. to 20s. for Cardiff; timber used in the quarter, 1997. 17s. 5d.; iron, 377. 11s. 6d.; steel, 237. 16s. 10d.; candles, 388 dozen, 1017. 17s.; cartridges, 6000, 1217. 10s.; tallow, 407. 3s. 10d., while 6s. 6d. paid for the grease. The whole of the articles of commerce consumed in working these extensive mines in the quarter cost 15817. 10s. 2d. And when we consider the hundreds of mines now working in Cornwall and Devon, many of them at considerably greater cost than Great Wheal Vor, some little idea may be formed of the sums paid to merchants in a year on the part of the mining community; and it would also be well for all other mining companies as well as full and explicit in their accounts as Great Vor. East Grenville shares kept firm until Friday morning, when they declined to 4½, and leave off 4½ to 4½. The agent's report, received on Thursday morning was the most favourable one for some time past, inasmuch as the elvan, against which the ore made in the 65 (and the absence of which in the 75 had given rise to disappointment to those who expected ore in that level sooner than it was met with in the 65), had made its appearance in the 75. The words of the report are—"We are glad to say that we have discovered the elvan (in the 75), and which has come in in precisely the same way that it did in the 65." They also add—"We are very much pleased with the appearance of the mine to-day, and we have every confidence of ore holding down to the 75." This report naturally induced many purchasers, and then to see a fall in price of 15s. to 16s. per share the next morning has given rise to much dissatisfaction and comment. The mine sinking below the 65 the agents also reported continued worth 5 to 6 tons of ore per fathom. On Friday morning a letter from the agents gives the same favourable report of the 75, but states the lode in the winze was not quite so good, worth 4 to 5 tons of ore per fm.; and upon this a panic was created in the shares by jobbers on the market, which at one time receded to 4. West Chiverton, 60 to 62½; the ore sold on Wednesday was 36 tons, at 207. 15s.; 35 tons, 207. 9s.; 70 tons, 107. 2s. 6d. The water has very much increased in the 90, south of Hawkes's shaft, and the agent thinks the main part of the lode is not far off. The 80 west, on Williams's lode, is worth 20l. per fathom. Two winzes sinking below the 80 are worth 100l. and 120l. per fathom.

Bryn Gwio, 18 to 20; Camborne Vean, 2½ to 2½; Carn Camborne, 25s. to 26s. 6d.; Clifford Amalgamated, 31 to 32; Devon Great Consols, 580 to 600; East Basset, 48 to 50; East Carn Brea, 6½ to 6½; East Lovell, 14½ to 15½. East Russell shares have been flat, at 4½ to 5; at the meeting a call of 7s. 6d. per share was made. Wheal Crebor, 40s. to 41s.; East Wheal Vor, 40s. to 45s.; Grambler and St. Aubyn, 7 to 8; Hallenbeagle, 3½ to 3½; Hingston Down, 3½ to 4. Kelly Bray in request, at 15s. to 17s. 6d.; the lode in the 25 is worth 50l. per fm. The bunch of ore has been driven upon 7 fms. East Rosewarne, 2½ to 2½; the lode at King's shaft is worth 25l. per fm.; the 65 west, 147. per fm. Lady Bertha, 16s. to 18s., and enquired for. Marke Valley, 5½ to 5½; North Chiverton, 2 to 2½; North Roskear, 19 to 21; Frank Mills, 5½ to 5½; Wheal Albert, 2 to 2½; Prince of Wales, 2s. to 4s.; Prosper United, 2½ to 3; Providence Mines, 35 to 36. South Lovell, 2½ to 2½. In our last this mine was quoted as "South Chiverton." South Crofty, 12 to 13; Tincroft, 16½ to 16½; Vale of Towy, 4s. to 6s. West Seton, 205 to 210; at the meeting a dividend of 4l. per share was declared. West Tolgas, 60 to 62½; Wheal Basset, 95 to 100; Wheal Chiverton, 6 to 6½; Wheal Grenville, 4½ to 4½; Wheal Mary Ann, 13 to 14. West Caradon, 7 to 7½; at the meeting a call of 2l. per share was made, and the balance in favour of the mine was 3187. Wheal Trelawny, 18½ to 19½; at the meeting the accounts showed a profit of 6897. 12s. 6d. on the quarter, and a dividend of 12s. 6d. per share was declared. Wheal Seton, 195 to 200. North Shepherds, 2½ to 3; the lode at the shaft contains more silver-lead, and is looking much better altogether. Grylls Wheal Florence, 1½ to 2½.

On the Stock Exchange a fair amount of business has been transacted in Mining Shares during the week. The following quotations were officially recorded in British Mining Shares:—Clifford, 32; East Lovell, 14½, 15½, 15½; East Wheal Russell, 5; Prosper United, 3; East Basset, 48; Great Laxey, 19, 18½; Great Wheal Vor, 35½; East Caradon, 20. In Colonial Mining Shares the prices were:—Port Phillip, 1½, 1½, 1½, 1½, 1½; Cape, 10; Yudanamatana, 1½, 1½; Worthing, 3. In Foreign Mining Shares the prices were:—Alamillos, 1½, 1½; Don Pedro, 4; Pontgibaud, 7½, 9; United Mexican, 5, 5½; Panulillo, 4½.

IRISH MINING SHARE MARKET.—The fluctuations in the price of Connoisseur shares have occurred "exactly as foretold" by us, as our extraordinary successful weather prophet, Mr. Shepherd, C.E., is wont to say. The mine being divided into 50,000 parts, of 1l. each, it is natural that these should be widely distributed, and often fall into the hands of small speculators, who temporarily invest their little spare cash in these shares, in full reliance on the still improving value of the mines, the practical skill of the regenerated management, and the world-wide fame of the district. Of course, people thus shrewdly judging are also well aware that on so minute a division of capital the advance of every shilling per share is equal to a rise of 2500l. on the value of the whole mine. We, therefore, acknowledge, with our usual modesty, that it required but moderate sagacity and experience to foresee that a sudden jump from about 20s. to 27s. per share would speedily bring many weak holders into the market, anxious at the close of the year, with its many concomitant demands on their small purses, to realise the premiums on their venture, and that such an influx of sellers would result in the reduction of the price. However, the reliance on the *bona fide* character of the reports of improvements in the mines presented a too smart a drop on the first rush, and 25s. per share may be quoted as the price obtained on an average during the last fortnight, and as the present value for cash transactions, 25s. 6d. being freely given for account. Wicklow Copper shares (27. 10s. paid) experienced some depression; but, after touching 127. 8s. 3d., have recovered, and are in request, at 127. 12s. 6d., and on sale at 127. 15s. The demand for shares of the General Mining Company for Ireland was much strengthened by the explanations at the last meeting of the shareholders of the favourable prospects of the undertaking, and for some days 47. 12s. 6d. per share was easily obtainable, but a slight reaction has set in, and they are now on offer at that price. Mining Company of Ireland shares have been considerably dealt in, but without producing an upward tendency, the last prices ranging from 277. 27s. 6s., and 277. 10s. having been accepted for the middle of

next month. For Killaloe Slate shares an advance of 2s. 6d. was asked, but not granted. Carysfort shares are on offer.

The London Patent Coal Company, with a capital of 10,000l., in shares of 5l. each, has been formed for the purpose of purchasing and working the patent of Mr. David Barker, for forming patent fuel, by compressing slack with a non-bituminous substance. The prospectus states that the purchase will be made "on moderate and satisfactory terms." It is stated that the machinery to turn out about 30 tons per day (of ten hours) is estimated to cost about 1000l. The cost of the slack coal, its conveyance to London, and its manufacture into the patent coal, ready for domestic and all other uses, is estimated not to exceed 12s. 6d. per ton, whereas the value of the coal in its complete state will be equal to that of the best coals supplied for domestic use in London. To those in the habit of putting coals on the fire with their fingers the proposed fuel possesses important advantages; being free from dust, it is quite clean, and can be handled without soiling; it is consumed very slowly, and leaves a residue of very good cinders; whereas the coal hitherto compressed, having bitumen mixed with it, burns fast, and is reduced to ashes. It is remarked that the company offers two very material advantages to the poor and working classes—they will not only receive all solid coal without small or dust, but they can also see at once that they have their full and correct weight by counting the bricks, or cubes, which will be uniform in size and weight. The works will be under the personal superintendence of the patentee.

The Mexican Gas Company, with a capital of 160,000l., in shares of 20l. each, has issued its prospectus. The object of the undertaking is to supply the City of Mexico with gas; the concession is for 25 years, and the price authorised is 11. 6s. per 1000 cubic feet. The municipality has contracted for 2000 public lights, at 127. 10s. per annum=17. 5s. per 1000 cubic feet. It is mentioned that the timber with which the neighbouring forests abound, and the cheapness of resin suitable for the manufacture of gas, are remarkable features in the value of the concession. It appears that Mr. John Potts, the concessionaire, accepts shares in the company as remuneration for the concession, but the number is not stated. Some of the vendor's shares are not entitled to dividend for two years, unless an average dividend of 10 per cent. has been paid to the other shareholders. Mr. Evans, of the Chartered Gas Company, will be consulting engineer, and Mr. Bower engineer to the company. The population of the City of Mexico is 250,000.

The London and Provincial Mortgage Bank of England, with a capital of 200,000l., in shares of 25l. each, has been established to make freehold and every description of land and property easily negotiable. It is mentioned that the Credit Foncier, a similar company, showed a profit on the six months ending August equal to 180 per cent. per annum on the called-up capital. Negotiations are pending for connections with the North of England.

At Dolcoath meeting, on Monday, the accounts showed a profit on the two months' working of 2081l. A dividend of 214s. (6l. per share) was declared.

At West Seton meeting, on Tuesday, the accounts showed a profit on the two months' working of 1482l. A dividend of 1600l. (4l. per share) was declared.

At the Wheal Trelawny meeting, on Wednesday (Mr. R. Hallett in the chair), the accounts showed a balance of profit of 20027. A dividend of 12s. 6d. per share was declared. Details in another column.

At Wheal Mary Ann meeting, on Dec. 13 (Capt. Peter Clymo in the chair), the accounts for the three months ending September showed a credit balance of 22087. 19s. 5d. The profit on the three months' working was 4677. 11s. 3d. A dividend of 5127. (10s. per share) was declared, and 19967. 19s. 5d. carried to credit of next account. Capts. Clymo, Hodge, Harris, and Stevens reported upon the various operations.

At the West Caradon Mine meeting, on Wednesday (Mr. R. Hallett in the chair), the accounts for the four months (July to Oct.), showed a loss of 14927. 10s. 11d. The general balance-sheet showed a credit balance of 3187. 12s. 3d. A call of 2l. per share was made. Details in another column.

At West Wheal Vor meeting, on Monday (Mr. W. Gundry in the chair), a resolution was unanimously passed, authorising the committee to purchase West Wheal Metal. Details in another column.

At the Bryn Gwio Mine meeting, on Tuesday (Mr. J. Balster in the chair), an adjournment took place until Monday, for the re-consideration of passing the accounts. Mr. W. Mitchell was appointed to the office of secretary, rendered vacant by the death of Mr. Dunford. Details in another column.

At Trevenen and Tremeneers Mines meeting, on Dec. 9 (Mr. John Ware in the chair), the accounts for the three months ending September showed a debit balance of 13127. 10s. 7d. A call of 3s. per share was made. Mr. Ware was appointed purser, in the room of Mr. Westcomb, at a salary of 67. 6s. per month. Captains Medien, Tippet, and George reported that their prospects were still good, and the tin returns were likely to increase. They have 199 hands employed.

At New Wendron Consols meeting, on Dec. 9 (Mr. F. Hill in the chair), the accounts for the three months ending Sept. showed a debit balance of 4807. 11s. 7d. A call of 10s. per share was made. Capts. R. Glynn and John Curtis reported upon the various points of operation. They have 20 hands employed.

At Yarnor Mine meeting, on Dec. 9 (Mr. John Divett in the chair), the accounts showed a debit balance of 5217. 19s. A call of 3s. per share was made. A meeting will be held in a fortnight to decide upon the best mode of winding-up. Capt. R. Barkell reported upon the various points of operation.

At the East Carn Brea Mine meeting, on Tuesday (Mr. C. J. Furlonger in the chair), the accounts showed a credit balance of 4547. 10s. 5d. The agents' report stated that the next sampling would not be less than 300 tons of ore.

At the Wheal Uny (special) meeting, Mr. Edward King was appointed secretary, in the room of Mr. Dunford, deceased.

At the East Wheal Russell meeting, on Thursday (Mr. J. Procter in the chair), the general balance-sheet showed an excess of liabilities over the assets of 4267. 15s. 7d. A call of 7s. 6d. per share was made. Details in another column.

At the Long Rake Mine meeting, on Tuesday (Mr. G. Batters in the chair), Mr. W. Lawington was appointed secretary in the room of Mr. Dunford, deceased.

At the Pontgibaud Silver-Lead Mining and Smelting Company annual general meeting, held at Paris, on Dec. 3, the accounts for the year ending June 30 were received and adopted. The net profit for the 12 months amounted to the sum of 10,114. 15s. 3d., which added to the balance previously at the credit of profit and loss account, 2897. 3s. 8d., made the sum of 13,011. 18s. 11d. available for division. A dividend of 30 frs., or 16s. per share—equal to 8000l., was declared, after which, setting aside 10111. 9s. 6d. for the reserve fund, and 5057. 14s. 9d. for the consell d'administration, a balance of 8867. 14s. 8d. is carried to the credit of profit and loss account. Favourable reports were presented by the consell, and by Messrs. Taylor, the engineers of the company; Messrs. Bontoux, De Neudt, Gladstone, and Moncheourt, members of the consell d'administration going out of office were, re-elected. The dividend is now in course of payment.

At Great Wheal Vor United Mines meeting, on Wednesday next, the accounts will show a profit on the three months' working of 86957. 7s. 8d. The tin sold in the three months ending October amounted to 148 tons 5 cwt. 1 gr. 26 lbs., which realised 97967. 2s. 11d.; the mine cost was 85817. 0s. 3d.; dues, 5297. 12s. 3d.; and the London and travelling expenses, 2347. 0s. 10d.; leaving the balance of profit as above.

COAL MARKET.—On Monday the fresh arrivals were 72 ships, affording an ample supply for the immediate requirements of the trade. Household coal met with a fair enquiry at slightly lower prices. Hartley's gave way 6d.; best house coal, 22s. to 22s. 6d.; seconds, 20s. 6d. to 21s. 6d.; Hartley's, 17s. 6d. to 18s. 3d.; manufacturers', 17s. to 18s.—On Wednesday only 25 ships came to hand; the market was quiet, house coals quoting slightly lower prices.—On Friday a large portion of the fleet arrived (133 ships), and business was very active at fully last prices for all descriptions of coal. Hetton Wallend, 22s. 6d.; South Hetton Wallend, 22s. 6d.; Tees Wallend, 22s.; Braddyl's Wallend, 21s. 6d.; Eden Main, 21s.; Bell's Wallend, 20s. 3d.; Framwellgate Wallend, 21s.; West Hartley, 18s.; Tanfield Moor, 18s.; 11 cargoes unsold; 100 ships at sea.

NOVA SCOTIA COAL TRADE.—The whole amount of coal raised and sold from Nova Scotia from 1827 to 1857, when the monopoly of the General Mining Association ceased, was 1,841,538 tons. The amount raised and sold in 1857 was 101,082 chaldrons. Since that time the amount has steadily increased, being in—

	1858	1859	1860	1861	1862	1863	1864
Tons	239,618	267,496	304,129	267,496	267,496	267,496	267,496
Chaldrons	108,553	119,798	134,629	119,798	119,798	119,798	119,798

In 1863 there was sold in Nova Scotia .....

Two-thirds of the yield of the mines of Nova Scotia go to the United States.

EXPORTS OF COAL TO FRANCE.—In October our exports of coal to France again sustained a check. The course of events during the ten months ending Oct. 31 has been as follows, month by month, as compared with the corresponding periods of 1863 and 1862:—

	1862.	1863.	1864.
January .....	123,785	93,593	131,673
February .....	114,552	103,298	115,207
March .....	125,250	117,138	120,959
April .....	113,129	119,687	126,903
May .....	125,221	121,557	114,165
June .....	90,160	111,736	126,117
July .....	157,588	105,283	92,166
August .....	105,511	109,885	115,595
September .....	121,229	95,595	124,407
October .....	131,642	115,655	100,722
Total .....	1,207,827	1,093,881	1,165,915

Thus, comparing 1864 with 1863, the coal exports of Great Britain to France advanced in January, February, March, April, June, August,

and September, but declined in May, July, and October, the general result being an increase this year of 72,234 tons. Two months have still to be taken into account, and we may safely conclude that our exports of coal to France this year will not be less than 1,370,000 or 1,380,000 tons. In 1863 the total deliveries of English coal—by which expression is also to be understood cinders and culm—to France were 1,307,024 tons. In 1862 they were 1,443,115 tons; and in 1861, 1,452,208 tons. In 1860 our coal relations with France seem to have attained their greatest development; but if we compare the probable deliveries of this year with those effected in 1854, 1844, 1834, 1824, and 1814, we shall see that the exports of English coal to France, although checked to some extent, are still on an immensely larger scale than they formerly were. Let the reader glance at the annexed figures:—

	1814	1824	1834	1844	1854	Tons
1814 .....	11,392	—	—	—	—	427,693
1824 .....	25,433	—	—	—	—	708,530
1834 .....	45,944	—	—	—	—	1,370,000

In the five years ending 1859 there was an extraordinarily rapid increase in the exports of English coal to France, the total being, for 1855, 881,339 tons; for 1856, 1,057,489 tons; for 1857, 1,240,917 tons; for 1858, 1,313,578 tons; and for 1859, 1,395,872 tons. We have seen that the maximum was attained in 1862. The efforts since made to develop the production of coal in France have not been altogether without success, the extraction of the current year being estimated at 11,500,000 tons, while in 1854 it was only 6,827,057 tons; and in 1844, 3,782,739 tons. The extraction has thus increased during the last ten years at the average rate of 500,000 tons per annum, while in the previous decade the average rate of progress was only 300,000 tons per annum. We may expect during the next ten years to see the extraction increase at least its present rate in France; nevertheless, there is little probability, so great is the constant growth of consumption, of the French demand for English combustible being reduced below its present level.

PURCHASE OF A COAL FIELD BY THE FRENCH GOVERNMENT.—"Several foreign journals (says the *Constitutionnel*), in mentioning a proposition made to the French Government to purchase near its frontier coal mines of considerable extent, have added details which are completely incorrect, and which misrepresent the purely commercial and industrial character of the arrangement. The following information on the subject we believe to be correct:—The coal beds in question extend to a length of 25 miles, by a breadth of 10. The annual production is 50 millions of quintals (221¼ lb. each), and may be easily doubled, for several centuries, without fear of exhaustion. The coal, the quality of which is far superior to that of Belgium, is, according to an examination ordered by a German Government, only one per cent. below that of Newcastle. In the extent of ground above mentioned there are five beds of coal of equal value, presenting together a thickness of about 30 feet, and the last of which is only 135 feet from the surface. A journal has spoken of a naval station on a sea where France has great interests, and the establishment of which would be consequent on the purchase of the mines in question. Our letters inform us that the place alluded to is on the coast of the German Ocean, and has an excellent harbour, almost opposite Heligoland. The cost of the coal, extraction and transport included, would be 20 centimes the 100 kilograms. Our letters add that the negotiations which have been opened are progressing satisfactorily."

TERMINATION OF THE SOUTH YORKSHIRE COLLIERS' STRIKE.—The strike at several of the South Yorkshire collieries, which took place in the early part of the year, terminated on Thursday, after a struggle extending over forty-three weeks. It will be recollected that in February the miners employed at the Oaks and High Royd Collieries demanded an increase of 10 per cent., which was refused by the masters, on the ground that the prices paid in the district were considerably higher than those given in any other part of the country. The men at both the collieries, numbering upwards of 600, then struck, and left work at the expiration of their notice. The Masters' Association, believing that it was the intention of the Miners' Union to strike at all the collieries in succession as they succeeded in obtaining their demands, shut up all their collieries, and for nineteen weeks looked out for 6000 men. A few days since the men at High Royd returned to work on the old terms, and on Thursday the old hands at the Oaks (one of the largest in the district) gave in, and took to their old places. In neither instance were the demands of the men acceded to, although at the Oaks the proprietors have agreed to equalise, as far as possible, the wages paid for working in "bad places" with those in better ones. The result of the strike has been that the men, after being out for ten months, return to work nearly as they came out. To both masters and men the loss has been serious, the former in having their trade entirely stopped and fresh markets to seek for their produce, whilst the men in wages alone have lost at least 70,000l. The strike has also had the effect of introducing machinery for getting coal, and from the success that they have already had in the course of a few years they will work a great revolution in the South Yorkshire coal fields, as they will tend greatly to lessen the demand for working colliers.

DREADFUL COLLIERY ACCIDENT.—NINE MEN DROWNED.—A dreadful accident took place on Thursday morning, at the works of Messrs. Craig, Taylor, and Craig, Leewood Green Colliery, near Mold, whereby nine men lost their lives. The cause of the accident is attributed to water rushing into the pit where the men were working from an adjoining old pit.

THE ROYAL (FOREST OF DEAN) MINING COMPANY have purchased the Bishwale Colliery, near Swansea, and now in work; also 3-4ths of the High Delf Engine Colliery, adjoining the Company's Royal Colliery.

SALE OF BYER'S GREEN COLLIERY.—This colliery, belonging to the West Hartlepool Harbour and Railway Company, was brought to the hammer, by Mr. C. Brough, at Mr. Turner's, the County Hotel, on Tuesday. There were a large number of gentlemen present. The bidding was commenced by Mr. Isaac Lowthian Bell, with the offer of 30,000l., his last bid being 44,500l. Mr. Richard Heekels, colliery viewer, Penarth House, bid 36,500l.; Mr. John Clayton, Newcastle, offered 41,800l.; Mr. Geo. Dyson, of Tadhoe Ironworks, 50,400l.; and Mr. John Marley, engineer, Darlington, 51,100l. The last offer was made by Mr. Joseph Dods, Stockton—51,200l. The colliery was afterwards purchased privately by Mr. Dods, for Messrs. Bolckow, Vaughan, and Co. (Limited), for 53,000l., the amount of the reserved bidding.—*Durham Advertiser*.

PORT AUGUSTA AND NORTHERN RAILWAY COMPANY OF SOUTH AUSTRALIA (Limited).—A resolution has been passed in the Legislative Assembly of South Australia granting four square miles of country, in lieu of two originally granted, for every mile of railway made north of Port Augusta.

GUNPOWDER SUPERSEDED IN BLASTING.—Mr. T. M. Evans, of Ruan, Denbigh, proposes to use tin tubes filled with explosive gas, and hermetically sealed, as a substitute for gunpowder in blasting. As might naturally be supposed from the impracticability of the proposition, the patent applied for was not proceeded with.

FLEXIBLE TUBING FOR VENTILATING MINES.—Mr. Ellis Lever, of Manchester, proposes in the manufacture of flexible tubing to rivet or bolt the hoops or rings to the flexible material during the operation of sewing or otherwise seaming the material to form the tube. To some of these rivets or bolts he attaches a ring, or partial ring, to hang outside the tubing, for the purpose of suspending such tubing, so as to keep it from damage.

ORE CRUSHING MACHINERY.—Messrs. Smith and Roberts, of Widdow, near Warrington, have patented a modification of Blake's stone-crusher, which consists in applying the power to move the jaw beyond the fulcrum instead of on the crushing side. The lever is worked by steam from a crank-shaft.

A CHIMNEY, about 100 feet high, comprising about 90,000 bricks, and estimated to weigh over 200 tons, was recently moved a distance of 100 ft. in Worcester, Massachusetts, without breaking a brick.

LEAD ORES.				
Sold on the 8th December.				
Mines.	Tons.	Price per ton.	Purchasers.	
Bedol-Aur .....	74	£13 3 6	Walker, Parker, & Co.	
Golch Hill .....	4½	13 6	A. Eytton.	

Sold on the 19th December.

Frongoch .....	121½	12 10	Sims, Williams, & Co.	
ditto .....	37½	12 10	Panther Co.	
East Darren .....	37½	16 3 0	ditto	
ditto .....	37½	16 3 0	Sims, Williams, & Co.	
Cwm Erdd .....	25	16 19 0	Newton, Keates, & Co.	
ditto .....	40	16 16 0	Panther Co.	

Sold on the 14th December.

Harwood .....	10	13 0 0	Shield & Dinning.	
North Laxey .....	15	14 9 0	Sims, Williams, & Co.	

BLLENDE.				
Sold on the 13th December.				
Mines.	Tons.	Price per ton.	Purchasers.	
North Laxey .....	8	£2 6 0	Vivian & Sons.	

BLACK TIN.				
Sold on the 13th December.				
Mines.	Tons c. q. lbs.	Price per ton.	Purchasers.	
Kitty (St. Agnes) 20 7 2 26	—	—	£1197 14 0	

NO SALE on Thursday last, December 15.

Copper ores for sale on Thursday next, at the Royal Hotel, Truro.—Mines and parcels.—Devon Great Consols 2321—East Caradon 491—Marke Valley 460—Devon and Cornwall 291—Okel Tor 216—Bedford United 194—Brookwood 137—Kelly Bray 110—Wheal Friendship 81—Bampfyde 75—North Robert 60—Calstock Consols 49—Furzedon 39—Wheal Edward 35—Lady Bertha 31—South Bedford 30—Sorricks Consols 26—Hawkmor 15.—Opie's Ore 1.—Total, 4650 tons.

Copper ores for sale on Thursday week, at Tabb's Hotel, Redruth.—Mines and parcels.—Clifford Amalgamated 626—South Caradon 500—Phanix Mines 467—Hallenbeagle 362—Fowey Consols 360—West Damsel 210—Great Wheal Ray 268—Grassbrook Moor 248—Great North Downs 200—Wheal Rose 157—Glaucous Caradon 150—Broomwade 90—Great Brigan 67—Falmouth and Sparrow 200—North Grambler 19—Grambler and St. Aubyn 14—Harvey's Ore 7.—Total 3826 tons.



## WATSON AND CUELL'S MINING CIRCULAR.

WATSON AND CUELL,  
MINING AGENTS, STOCK AND SHARE DEALERS, &c.  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Messrs. WATSON and CUELL having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special reports and remarks upon Mines and Mining, and the state of the Share Market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. Watson, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium published in 1843 Mr. Watson was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. Watson and Cuell have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share-dealing than there is at present; and, from the lengthened experience of Messrs. Watson and Cuell, they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON and CUELL transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt, and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON and CUELL also inform their clients and the public, that they transact business in the public funds, railways, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON and CUELL are almost daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON and CUELL having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are enabled to supply shares in all the best mines at close market prices, free of all charges for commission.

Injurious as the system of "bearing" shares is to the bona fide shareholders, we feel, and know, that it is impossible to stop it altogether; and, perhaps, to a certain extent, when it acts as a gentle check to the exuberant fancies of the "bull," it may be a sort of necessary evil; but it does seem strange to us that systematic "bearing" should be encouraged and assisted by large shareholders themselves. Yet such is the fact. In the celebrated "walk" of a certain personage, he describes a pig which he saw swimming up a river, and which at "every stroke was cutting his own throat;" and the example seems to be followed by some of the shareholders in mines. The object of the "bear" is to sell largely of shares, though he does not possess one, in any mine that is prominently before the public. He will sell to the extent of hundreds, and having sold, of course, his interest is to depreciate the property as much as he can, that he may pick up the shares cheaper than he sold at before the settling-day arrives; and, if he cannot do this, he knows he can go to certain large shareholders and, for 6d. or 1s. per share, borrow the shares to deliver on account-day, and so give him longer time to use his depressing influence, and prevent many good mines from reaching their fair and legitimate value. This sort of thing has been in constant practice at Wheal Crebor, and will account for present prices.

WHEAL ALBERT.—This mine, situated between the celebrated Old Shepherds and North Chiverton, has been strongly recommended to us as one likely very soon to pay its way, and one or two important points are coming off. There are 3000 shares in it, nearly all of which are held by local parties, who are not, we are told, desirous of selling. But we are offered from 100 to 200 on reasonable terms, and intend having the mine inspected, and, if the report be such as to satisfy us, we shall take the shares; and any clients wishing for 10 or 20 each can have them at 2s. 6d. per share beyond the price we pay for them.

CORNISH PUMPING ENGINES.—The number of pumping engines reported for Oct. is 34. They have consumed 2128 tons of coal, and lifted 15.2 million tons of water 10 fms. high. The average duty of the whole is, therefore, 48,100,000 lbs. lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Rosevear—70 in.	Millions	56.8
Chiverton—Cookney's 60 in.		52.7
Cornwall Mines—Micheil's 72 in.		55.3
Cook's Kitchen—50 in.		54.5
Crane—70 in.		56.3
Great Wheal Buay—Harvey's 85 in.		58.5
Great Work—Leeds' 60 in.		65.5
North Wheal Crofty—Trevenen's 80 in.		57.3
South Wheal Frances—Marriott's 75 in.		52.2
Treloweth—60 in.		44.4
West Caradon—Elliot's 50 in.		63.5
West Wheal Soton—Harvey's 85 in.		53.1
Wheal Curtis—70 in.		48.8
Wheal Ludcott—Willcock's 50 in.		55.0
Wheal Margery—Wesley's 45 in.		55.8
Wheal Soton—Tilly's 70 in.		57.6

"LETTS'S DIARIES" FOR 1865.—To comment upon the merits of annual which have obtained for themselves such a reputation as secures them a regular circulation of upwards of a quarter of a million copies would be altogether unnecessary; we may, therefore, content ourselves with simply stating that the editions for 1865 are now published, and that they are in every particular equal to their predecessors. Besides the usual almanac matter, "Letts's Diaries" embrace a list of London and country bankers, army and navy agents, list of the members of both Houses of Parliament, English and Scotch peers, and the tariff of Customs duties, whilst in the shape of historical information we have an account of the highest and lowest prices of the Funds, and a commercial summary for the year, compiled in the most concise and careful manner. The diaries are issued in almost every size, from a card-case almanac to a full sized desk diary; and the different styles of binding, which are already very numerous, have this year been materially increased; and the selection now embraces such varieties of russet, morocco, calf, roan, velvet, and kid, that the most fastidious will be able to make a choice to suit his taste. For office purposes No. 11 is as useful a diary as could well be made, whilst No. 12, though large enough for all ordinary purposes, is enclosed in a pocket-book of convenient size, which no man of business would consider inconveniently bulky.

ACCOUNTANTS' CHARGES.—The decision of the Master of the Rolls in the case of *Meymott v. Meymott* has attracted a good deal of attention. The accountant in this case had been appointed by the Master of the Rolls, on the application of the plaintiff, as the accountant, to take certain partnership accounts. By the Act of Parliament under which the Judge was empowered to obtain the assistance of an accountant (15 and 16 Vic., c. 86, s. 42, 43), the allowance in respect of fees was regulated, if necessary, by the Taxing Master of the Court of Chancery, subject to an appeal to the Judge, whose decision was final. The question in this case was at what rate an accountant could charge per day for his services. The accountant here had charged four guineas a day, and the Court cut down his charge to two guineas, on the ground that the payment in such cases might be fairly governed by the rules and rates of remuneration laid down by the Lord Chancellor for accountants in the Court of Bankruptcy, which are two guineas for the principal himself, one guinea for his first clerk, and 10s. per day for every other clerk's time.

ISSUING AND APPROPRIATION OF NEW SHARES.—The Court of Chancery will not interfere with the internal management of a joint-stock or incorporated company. But where the directors of a railway company, acting upon an old resolution of the shareholders, authorising the directors to raise additional capital, and, without notice to the general body of the shareholders, are about to issue new shares and appropriate them for an object different from that in respect of which the power was given to raise money by the issuing of shares, the Court will interfere by injunction to restrain the directors from issuing and appropriating such shares. Vice-Chancellor Wood did so in the case of *Fraser v. Whalley*, the plaintiff being a shareholder in the Oswestry and Newtown Railway Company, in Wales.

THE MAGNESIUM LIGHT.—A singular circumstance was communicated to the French Photographic Society at the last sitting by M. Placet. The magnesium light is so powerful, that when placed at a short distance from the object-glass it will melt its surface. An object-glass spent in this way was produced by him at that sitting. Photographers had better take the hint, and not bring the light too near the apparatus.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending December 11 was 11,718l. 2s. 5d.

THAMES TUNNEL COMPANY.—Receipts for the week ending Dec. 10, 79l. 2s. 11d.; number of passengers, 18,995.

## Dublin International Exhibition.

## DUBLIN INTERNATIONAL EXHIBITION OF FINE ARTS AND MANUFACTURES, 1865.

UNDER THE SPECIAL PATRONAGE OF HER MAJESTY THE QUEEN.  
Intending Exhibitors are informed that the 31st December is the latest day on which APPLICATIONS FOR SPACE will be received. The requisite forms can be obtained at the House of the Society of Arts, John-street, Adelphi, London, W.C., or at the Exhibition Palace, Dublin.  
By order, HENRY PARKINSON, Sec.

## Notices to Correspondents.

\* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journals should be regularly Aided on receipt: it then forms an accumulating useful work of reference.

NOTES OF A COLLIER'S VISIT TO A CORNISH COPPER MINE.—Our excellent correspondent, "Collier," having availed himself of an opportunity of re-writing and elaborating the second of his letters on this subject (which had been necessarily somewhat hurriedly prepared), has added many additional particulars, the publication of which will be resumed in next week's Journal. The series will then form a most valuable contribution to our columns, and be of considerable interest to all connected with the working of both collieries and metalliferous mines.

SIR.—Will any reader kindly inform me, in next week's Journal, on the following point?—Can a body of directors meet and make a call without any previous intimation to the shareholders, and then refuse to furnish any particulars of how that meeting was constituted, or the subscribed capital (half the limit) has been expended, and yet enforce the call?—INQUIRER.

PENANCE CONSOLA.—How is it that this mine does not appear in the list of Progressive Mines? I have looked for it week after week. It surely is a property overlooked by the mining public. I was in the neighbourhood of the mine not long since, and had the curiosity to visit it, when I found that at a depth only of 20 fms. from surface the principal shaft is down on one of the finest lead lodes that can be seen in the county, almost, I should say, rich enough to pay the cost of the mine. I am sure that the lodes are sufficient to justify the immediate erection of a larger engine than the one now on the mine, and that if there ever was a mine in the county worthy of vigorous working it is Penance Consola. I learned while there that the adjoining ground between Penance and Swanpool Mines is forthwith to be worked by some wealthy local residents.—VIATOR.

CREANE'S BORING-MACHINE.—In reply to your correspondent of last week, we beg to state that Capt. Richard informs us he has been unable to report upon Creane's boring-machine for us, in consequence of the one at Gunnedale not being at work.—WERN, GRACE, and CO.: S. Finch-lane, E.C.

CREANE'S BORING-MACHINE.—Reading at various times in your valuable Journal the questions asked, and the evasive replies given, as to the amount of power required for working these machines, the amount of work to be done in hard ground, where one of the machines can be seen working underground, open cutting or tunnel, and the result of the trial at East Gunnedale, if satisfactory or not, Mr. Green's remarks on this machine do not appear in the least satisfactory.—MINER.

CREANE'S BORING-MACHINE.—Will the judges who witnessed the trial of Creane's boring-machine at Falmouth kindly inform the mining public, through your valuable Journal, at what rate it bored, the quality of the stone operated upon, and the amount of power required; also, whether there was any competition for the medal?—S.

PAYING MINERS.—Having noticed, in last week's Journal, the various observations and remarks of the deputation who have lately visited Devon and Cornwall to investigate the mode of working mines, the ventilation, and mode of payment, allow me, Mr. Editor, to make some observations on the mode of payment. It is, I think, a very hard case when miners first settle in a mine to have to work two months without receiving any pay, as they are entirely dependent on the shopkeepers for support, and subject to overcharge and inferior goods. Capt. P. Glynn remarks that the present mode of payment prevents men from moving about. I think some plan should be adopted to pay the miners once a fortnight, or to let them have a sublet, as formerly. If the present mode of payment were tried on the artisan, we should get no one to work. Alluding to the tally system, I think it would be a great blessing to the miners and their families if a combination was entered into to expel it from the counties. The cry should be, one and all—DOWN WITH THE SYSTEM.

NORTH WHEAL SOTON.—Some time ago I became a shareholder in this copper mining company (limited). I paid certain moneys according to requirement, and I had no idea but all was going on right until this morning (Dec. 14), when I received a circular from the Court of the Vice-Warden of the Stannaries, Stannaries of Cornwall, asking me to become a party to the winding-up of the concern. I shall feel obliged if someone connected would tell me the reason the company is being wound-up.—A SHAREHOLDER.

THE PRESLEY HILLS, PEMBROKESHIRE.—A communication on the geological formation, and probable metallic lodes, of the Presley Hills shall appear in our next.

PETROLEUM AS STEAM FUEL.—"P." (Holborn).—The article showing the fallacy of the proposition to substitute petroleum for coal as a steam fuel, to which "P." alludes as having been published in the "American Gas Light Journal," was reprinted in the *Mining Journal* of July 9 last. It was therein shown that under the most favourable circumstances "petroleum is 12½ times as dear a fuel as coal." In the Journal of Sept. 17 it was stated that "the relative amount of carbon and hydrogen in petroleum is about six parts of carbon to one of hydrogen; whereas in coal the amount of hydrogen is less in proportion, and there is also a small amount of oxygen present, which diminishes the heat. The result is that the heat-producing power of petroleum is greater than that of an equal weight of coal: it is, in fact, about half as much again. Even assuming that 1 ton of petroleum has twice the heating power of 1 ton of coal, the use of the former would be by no means desirable, owing to the enormous difference in price. A great stress is laid upon economy of storage; but as coal is half as heavy again as petroleum, it follows that, making every allowance for the loss of space caused by the interstices of the broken coal, there would be little advantage gained in this respect by the use of petroleum. It would doubtless be interesting were the profitable employment of petroleum for making steam demonstrated beyond a doubt, and we would throw no obstacle in the way of such a result; but we conceive that we are doing good service to all parties in placing before them whatever information can be obtained from any source regarding the use of this comparatively new article of commercial industry, even though it should seem to be against its introduction into more extended channels of trade."

MINING REPORTS.—It would be very gratifying to distant shareholders in New East Russell and East Bottle Hill Mines if the agents would send monthly reports to your valuable Journal.

ENNO'S SYSTEM OF GEOLOGY.—But for the fear that it would have been wasted upon him, we should have quoted the Latin proverb, which recommends a cobbler to confine himself to the treatment of slippers, as a full reply to "A Bristol Reader's" communication, which, we regret, shows so little power to distinguish between argument and abuse, that we cannot accede to his request to publish it. The epithets applied to Mr. Enno would, probably, apply with equal, or even greater, force to "A Bristol Reader." As the document evidently emanates from someone connected with the local Mining School, it would have been better had the writer submitted it to Mr. Handel Cushman, or some other gentleman of equal discretion, in order to prevent distressing reflections upon so valuable an institution. With regard to Mr. Enno's letters, it cannot be pretended that there are no statements the accuracy of which is open to question; but, at the same time, it is admitted by men of great geological experience that few series of letters, occupying equal space, contain more assertions calculated to create enquiry, and to expose geological fallacies—now too widely believed in—enabling those fallacies to be replaced by facts in the recognised text-books of the science. For instance, there is now no man of established reputation who seriously believes in the igneous theory, although the want of courage amongst those who have been teaching it for years prevents them from openly acknowledging their error. Had Mr. Handel Cushman read the letter signed "A Bristol Reader," he would at once have pointed out that a style of writing admissible from a practical miner could not be tolerated from a man of education; and that it is only when a writer is incapable of refuting an argument that he descends to an attack upon the language used. We trust we may long be favoured with the views of men so eminently practical as Mr. Enno, and shall at all times be ready to admit communications in reply, intended to expose errors, and explain the bases upon which they have probably been founded. To fair argument, in reply to Mr. Enno's statements, we shall have pleasure in devoting any required space.

QUARTERLY SALES OF BLACK TIN.—The subjoined corrections for the usual quarterly statement of tin sold only having reached us this week, the figures against the several mines in the list published in the Journal of Saturday last were erroneous. We must again request the pursers and agents of mines to send us the particulars of their sales of tin, lead, and blende as soon as they are effected, which will render subsequent correction unnecessary. The statements for the December quarter are now in course of preparation, and to us will receive the utmost attention.

BLACK TIN SOLD DURING THE QUARTER ENDING SEPTEMBER.			
Wheal Sidney (Plympton)	13 tons 16 cwts.	£888	11 2
Cornubia	12 " 0 "	784	10 0
Wheal Bassett and Grylls	76 " 16 "		

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

## THE MINING JOURNAL.

## Railway and Commercial Gazette.

LONDON, DECEMBER 17, 1864.

The opinion, long too general both in Erin and in England, that the interests of the two countries are opposed to each other has, happily, now almost disappeared, and it may safely be predicted that ere another summer has passed over us the mutual good feeling between the two races will be universal. The preliminaries for the "DUBLIN INTERNATIONAL EXHIBITION OF 1865" are now finally settled, and it is gratifying to find that the endeavours to secure its success are quite as great in this country as in Ireland itself, owing to its being now thoroughly recognised that whatever tends to the advancement of the one country must prove equally beneficial to the other. The means of intercommunication are now so admirable that no greater difficulty exists in reaching Dublin than in making the journey to many of the principal towns in Great Britain, and as the labours of the Exhibition Committee have hitherto received the highest approval, both from our own Government and those of other countries, all conspired expressing the earnest desire to promote the Exhibition to the utmost of their power, it may be anticipated that in 1865 Dublin will possess an attraction to be found in no other part of the world. The Exhi-

bition Committee is composed of the most influential men in Ireland, and from these an executive of twenty has been chosen, whose very names would be received as evidence that failure would be impossible. With such men as WILLIAM DARGAN, SIR ROBERT KANE, FRANCIS W. BRADY, Q.C., SIR RICHARD GRIFFITH, and HERCULES MACDONNELL, aided by others almost equally distinguished for their energy and patriotism, to direct it, the manner in which the project will be carried out can be as anticipated, and there is no doubt their labours will be well rewarded by the gratification they will have from knowing that they have been the means of cementing the hearts of Englishmen and Irishmen to an extent previously unknown.

The whole of the arrangements connected with the project are of the most liberal character; the productions of all nations will be admitted; no rent will be charged to exhibitors; all imported goods are admitted duty free; ample motive-power, both steam and water, will be provided without charge; and every facility will be given for the sale of goods exhibited; whilst, with a view to make the objects of the exhibition more extensively known, an interesting paper "On the Recent Progress and Present State of Industry in Ireland, and the Dublin International Exhibition of 1865" was read before the Society of Arts, on Wednesday evening, by SIR ROBERT KANE, F.R.S., whose name will long be favourably remembered as the first who really laboured to make the enormous industrial resources of Ireland known throughout the kingdom. From this paper it appears that the accommodation at the disposal of the Committee is already very large, and that the principal portions of the Exhibition will be located in the great conservatories of the winter garden—constructions in glass and iron, rivaling the Crystal Palace itself in elegance of design, although, of course, much inferior in extent, and affording advantages as to supply of light and means of display which could not be surpassed. Under those favourable circumstances, it may be hoped that, not merely on public grounds, but even on the lower but more directly practical basis of individual advantage, we may hope for the co-operation of the manufacturers of Great Britain, who cannot fail to derive material benefit from bringing the products of their factories and workshops under the immediate cognisance of the Irish people.

The absence from Ireland of the abundant deposits of bituminous coal, such as occur in this island, and on which gift of nature has been built up the colossal fabric of England's industrial power, necessarily prevents the establishment in that country of those branches of trade in which the cost of fuel forms any very large proportion of the total cost of production. Hence, although possessing in abundance deposits of the richest iron ores, they have not had any successful establishment of iron smelting in recent times. The iron ores, however, both as earthy carbonate and as hematite, are now largely exported from Ireland to this country to supply the enormously-increased demand. Similarly, although large quantities of copper ore are raised in Ireland, principally in the southern counties of Cork and Waterford, the ore is shipped to Swansea to be smelted, as the large proportion of fuel which is required in smelting copper would render the process in Ireland too costly to be profitably carried on.

In the case of the ores of lead and silver, however, the proportion of fuel necessary is not so large, and not merely are all the lead and silver ores raised in Ireland smelted in the vicinity of Dublin, but a large quantity of foreign ore of those metals are imported for Irish smelting works, the produce from which is highly esteemed, not merely in the local but in the British markets. He believed that this department of mineral industry will be found very efficiently represented by Irish smelters in the coming Exhibition. Although the smelting of iron ores and the actual manufacture of iron are not now carried on in Ireland, yet there is a very large amount of trade in the making of machinery, especially for the linen manufacture, of steam-engines and water-wheels, and of late years of iron ships. This latter business has already assumed large proportions. The Messrs. Harland and Wolff, of Belfast, have built in the last ten years twenty vessels, of an aggregate tonnage of 36,913 tons, giving employment to about 1200 men. The establishments of Messrs. Macalmon, at Waterford, are similarly active, and employ about 300 men, turning out annually, at least, one first-class steamer, mostly about 2500 tons burden each, and engaged in transatlantic voyages. The establishment of Mr. Pike, in Cork, is equally successful; whilst that of Messrs. Walpole, Webb, and Mewell, of Dublin, although only two years in existence, already gives employment to about 600 hands, and has completed five vessels, of which one of 1434 tons burden, the *Knight Commander*, was almost the only ship, that rode out unharmed the terrific cyclone that recently caused such frightful calamity at Calcutta. These particulars are mentioned to illustrate how much of industrial activity there already exists in Ireland, and how marked the extension of that activity in certain departments has lately become.

A very large branch of mining industry in Ireland, that of iron pyrites or sulphur ore, becomes the basis of an extensive series of chemical manufactures, which, however, are limited, just as in the case of iron smelting, to those branches in which the cost of fuel does not form a preponderant proportion of the total cost of manufacture. In Dublin, Cork, and Belfast, large quantities of sulphuric acid, of chloride of lime, sulphate of soda, &c., are made; the important branch of alkali making, as caustic and carbonate of soda, however, is not, as he believes, carried in Ireland beyond the manufacture of sulphate of soda. In mentioning the absence in Ireland of deposits of bituminous coal of industrial importance, it is, perhaps, proper to mention that several extensive coal fields, yielding, however, principally anthracite coal, exist in the interior of that country, and are worked with success and profit. Their produce, in, however, not so well fitted for manufacturing purposes, and is all employed for domestic use in their localities.

He could not pass from the subject of Irish fuel without reference to what constitutes so important a feature in the scenery and the agriculture of Ireland, the Irish peat-bogs. The reclamation of those great tracts of land to the uses of agriculture, and the employment of those stores of peat to the purposes of fuel, have occupied, and very properly, a large amount of attention; but, whilst recognising fully the importance of the subject, it will be seen that the progress of society and of the industrial arts in later years has diverted the question of much of the paramount importance than formerly belonged to it. In regard to the restoration of the peat-bogs to agricultural purposes, the first and necessary element must be a perfect drainage, a measure of truly national importance, indispensable for the proper cultivation of even the best land, and, in considering which, the improvement of mere peat-mosses cannot be held the primary object. But now that by the researches of Liebig, of Lawes, and others, the true principles of the growth of agricultural crops are understood, it is well known that even thoroughly drained peat will not supply the materials required for the production of food, and that the cost of supplying those materials, in the form of manures, if applied to the same area of land of more suitable constitution, will yield greater and more profitable returns. Hence, where ordinary farm land can be obtained, its improvement is preferable, as a field for the employment of labour and of capital, to the reclamation of peat-bogs.

Similarly, the altered circumstances of the country have deprived the question regarding peat as a fuel of much of the importance that formerly was attached to it. The facilities for internal intercourse afforded by the railway system which Ireland already possesses, and which tend every year to expand, together with the low rates of freight, which allow the introduction of sea-borne coal at moderate prices, all tend to limit the area within which peat as a fuel can be advantageously employed, and to confine its use to the vicinity of the bogs and to the agricultural population. The heating power of peat, even when best prepared and dried, is not more than two-thirds of that of coal, together with the greater cost of transport of a bulkier and less valuable article, place a limit to its economy which will determine practically the area within which it can be employed. The various plans proposed from time to time for the preparation of compressed peat have, therefore, been found not to possess the pecuniary advantages which had been at first expected from them, although eminently successful in so far as producing a compact, convenient, and agreeable fuel, which in some respects may deserve a preference over coal, although it cannot do so for general manufacturing purposes.

The position of the wool trade, the cotton manufacture, the manufacture of woollen and linen fabrics, the linen trade, and its very satisfactory extension, and the progress of the minor industries referred to, and in conclusion it was observed that the intervening channel has been practically bridged by the splendid steamers which give to the passage more than the security and almost the comfort of the railway train; that the journey from London to Dublin occupies but a portion of a day, we may by our uniting on the common ground of industrial fellowship, contribute to cement that union by which the greatness and the tranquillity of the empire is secured. The position and the prospects of Ireland have been represented in very desponding colours. Her woes and losses have been eloquently traced to commercial jealousy and political misgovernment, and there has been too much foundation for that charge, but, as he hoped, we have now passed from the crimes and errors of an ignorant and bigoted age into a time when the blessings of education have taught all classes the true road to national prosperity, and when a more enlightened and tolerant spirit governs the relations as well of nations as of individuals.

The greatest attention was paid to the reading of the paper, and at its conclusion an animated discussion was opened by the Chairman (Lord DUFFERIN, K.G.), Lord POWERSCOURT, Mr. V. FITZGERALD, Mr. HERCULES MACDONNELL, Mr. ANTONIO BRADY, Messrs. CHICHESTER FORBES, COLE, BACHOFFNER, HAWES, and others taking part. Mr. FITZGERALD expressed his belief that the best results might be expected from hearty co-operation in the views of the executive committee. The principle of improvement inherent in exhibitions like the forthcoming one was most powerful, indeed, the extent to which it told was hardly possible to estimate. Mr. MACDONNELL had visited the southern portions of the Continent. France had promised her hearty co-operation, and similar encouragement had been received in various other countries on the Continent. He believed that they should have a very good representation of the special products of each. Mr. BRADY had performed a similar office in the North of Europe; he had induced the Swedish minister to promise to send the treasures of Scandinavian art to the Dublin Exhibition in a Swedish man-of-war—the training-ship for the cadets of the Swedish navy. Denmark also, he believed, notwithstanding her recent disasters, would be splendidly represented; and he could tell the collectors of British art that it behoved them to send good specimens to the Irish Exhibition, if they did not want to be totally eclipsed by the noble representation of Scandinavian art that would be there exhibited.

There can be no doubt that the primary object of all exhibitors, whether at the great international gatherings at London, Paris, Dublin, &c., or at the smallest local show, is the extension of the business with which they are personally connected, and in this respect the Dublin International Exhibition of 1865 will probably afford a more favourable opportunity for bringing the merits of useful manufactures and contrivances prominently forward than any that has preceded it. The extent of the Exhibition space is less than that at the disposal of the Commissioners of 1862; but this will be amply compensated by the increased care to exclude exhibits which have bulk alone to recommend them. The public will be better able to devote the requisite time to examine the products shown; and as we understand it is not intended to scatter the medals and honours almost broadcast, as was the case in 1862, the fact of obtaining a prize at Dublin will really be some proof that the article obtaining it has some unusual advantage. The Commissioners intend to avail themselves of the experience of those who have preceded them, and to avoid, as far as possible, the errors into which they have fallen, without, however, so far departing from the



course before adopted as to risk the creation of other evils equal to those they are desirous to remove.

A prospectus has been issued of the CALDBECK FELS CONSOLIDATED LEAD AND COPPER MINING COMPANY (Limited), with a capital of 60,000*l.*, in 30,000 shares of 2*l.* each, of which, however, it is not expected that more than 12 per share will be required. The properties to be worked include the Roughton Gill Mine, the Dry Gill Mine, and the Carrock End Mines. The former, now working on a very limited scale, is making about 2000*l.* a year profit; but, when laid open on an adequate scale, this profit can, in the opinion of Mr. EVAN HOPKINS, be almost indefinitely increased. His words are—

I unhesitatingly recommend these mines, as they only require sufficient means to open the veins, extract the ore, and reduce them, on the magnitude of such mines as the Great Devon Consols, St. John del Rey, &c., to place them in a correspondingly remunerative and lasting condition.

Of this mine Mr. J. H. HITCHINS (of Devon Consols) also reports:—

This mine, however, has been worked only above the deep adit, without anything like sufficient capital, and, therefore, with a limited number of hands only, in a cramped, piecemeal, irregular, and, consequently, imperfect manner, which will always leave the effectual development of a mine a long way behind. There will, beyond a doubt, be found much greater and richer courses of ore in Roughton Gill, under the magnificent great gossan lode in the deep adit, than have been found above it. Indeed, I feel no hesitation in saying that, if the great mastery lode of Roughton Gill, Carrock End, and Dry Gill, are opened out deeper, and on an extended scale, as I have recommended, such trials will not fail to be attended with very great success, much greater, indeed, than is to be inferred from anything I have said in this report.

The purchase-money of these properties is 20,000*l.*, half payable in cash, by instalments, and half in shares. Of the sum of 10,000*l.* to be thus paid in cash, 8000*l.* is the valuation of the machinery and plant—so that, in fact, the vendors only receive 2000*l.* in money for their interest in the mines, in addition to the 10,000*l.* in shares—which is considered a moderate payment for property including a mine returning 2000*l.* a-year profit.

It may be interesting to the public to know that the Roughton Gill Mine was first worked about 35 years ago by a local company, which included the names of the late ROBERT STEPHENSON (the great engineer), the late HUGH PATTERSON (inventor of the desilvering process), and Mr. THOMAS SOWTH, F.R.S. (manager of the W. B. lead mines), when the profits divided averaged 700*l.* to 800*l.* per cent. per annum on the capital for many years—the 12*l.* paid shares having paid for years from 80*l.* to 100*l.* per annum. In consequence of this great success, the landowners refused to re-grant on anything like reasonable terms, and the mine passed out of the hands of the company including the eminent names mentioned.

The Chairman of the new company is Sir ROBERT BRISCO, Bart., Crofton Hall, Cumberland; and the directors also include the name of Mr. ADAM SCHOLES, director of Great Wheel Vor. The solicitors are the Messrs. CALTHORP, of Whitehall-place. A large proportion of the shares are already taken up—one landowner in the district taking 1000.

#### PETROLEUM AS STEAM FUEL.

It is much to be regretted that persons are still to be found whose time is of so little value that they can afford to employ it in attempting to substitute petroleum for coal, as a fuel for generating steam for marine purposes. It is reported that an elementary course of experiments was commenced last week, in the factory department of Woolwich Dockyard, with a view of testing the capacity of petroleum to supersede coal and other fuel on shipboard, and also in propelling steam machinery in the factories. The method adopted is totally distinct from that attempted some time ago in the United States of America, and is the patented invention of Mr. C. J. Richardson, an engineer residing at Kensington. He has submitted his plans to the Lords of the Admiralty, and has obtained permission to carry out his suggestion for the benefit of Her Majesty's service. The method is described as exceedingly simple, and, as stated by Mr. Richardson during the trials, it originated mainly from some comments on the subject, contained in an article which appeared in the *Times* of April 7 last. Of course it must be presumed that the "permission to carry out his suggestion for the benefit of Her Majesty's service," will bear the interpretation that he is "permitted to make experiments at Woolwich at his own expense, for showing the merits of his invention." And comparing Mr. Richardson's petroleum burner with other petroleum burners, he may or may not have made improvements; but to compare any petroleum burner whatever with an ordinary furnace, however carefully constructed, the petroleum burner must suffer by the comparison: the only mode by which petroleum can be made even to appear superior to coal, is by giving currency to statements which, when carefully considered, prove nothing, and carefully suppressing all those facts which are necessary to be known, in order to form any accurate conclusion as to the precise portions of the invention which have given rise to the fallacious notions.

Of course, there is not the slightest probability of the trials proving the invention to be of any practical utility; but the *Times* remarks that if the experiments should prove successful there is no doubt a reconstruction of the navy will be the result, as an enormous economy will be obtained both in the cost of fuel and in the saving of the immense space now occupied by the coal bunkers to be applied to other purposes. The plan under trial is simply to burn the petroleum through a porous material, which is placed in an iron chamber, dipped into a water vessel, and of iron. The oil admitted into the chamber soddens the porous material, and rises by a sort of capillary attraction. The surface then catches fire and burns rapidly, as long as the oil is supplied. The effect of the flame is so great that, with the small apparatus, which is only 2 feet superficial area, and affixed to a boiler, the oil on Saturday was utilised so as to be equal for steam purposes to 5 tons of coals. A third advantage is obtained by the employment of the petroleum—that no stokers are needed, and the boilers can be supplied with several fires one above another. The small grate used in the experiments was placed under a boiler of 17-horse power, and in two hours it raised the steam to 10 lbs. pressure. The only objection seems to be the fear of explosive qualities, but these Mr. Richardson states he is prepared to guard against effectually.

Now, starting as these assertions appear at first sight, they only require the roughest analysis to prove that they show nothing whatever in favour of petroleum, but, on the contrary, lead to the supposition that, had not the results been even less favourable than was anticipated, there would not have been such evident care to avoid the publication of all useful data. We are told that the oil used on Saturday produced the same result as 5 tons of coal, but no statement is made as to the quantity of oil that was used, which, for aught we know, may have been 5 tons also, the economic result in such a case being that 4*l.* worth of work can, with Mr. Richardson's improved apparatus, be accomplished with something less than 100*l.* worth of petroleum. A 2-ft. surface of porous material would allow the passage of an enormous quantity of petroleum in two hours—the time the furnace seems to have been in use—yet in this time Mr. Richardson only succeeded in getting a pressure of two-thirds of an atmosphere, and he does not tell us whether he got up steam from 60° Fahr. or 212°, which renders the statement of still less value. It may be true that no stokers would be required with the improved apparatus in use, but it would, probably, be difficult to prove that a larger number of hands would not be required to attend to the petroleum tanks and other apparatus connected therewith than are now engaged in stoking.

The fallacy of the proposition to use petroleum as steam fuel cannot, perhaps, be more briefly shown than by the statement of Dr. Paul, the analytical chemist, whose long connection with petroleum, and the manufacture of oils therefrom, entitles his opinion to some slight respect at least. He remarks that the experiments being made at Woolwich Dockyard in relation to the use of petroleum as steam fuel for ships, show that the erroneous opinions formed as to the practicability of substituting petroleum for coal as fuel in steam-vessels have not been abandoned. A very slender consideration of the character, composition, and cost of petroleum would be sufficient to show the impracticability of using it as fuel in such a case. The heating power of petroleum is certainly higher than that of coal—1:5 to 1:0. But the price of petroleum varies from 15*l.* to 20*l.* per ton. Its bulk in relation to coal is as 1:1.6, for quantities of equal heating power. Now these facts will be sufficient to convince anyone of the impracticability of using petroleum as a substitute for coal in steam-vessels, quite independently of any contrivance as to the mode of burning. The fact is, that supposing a practical method of burning petroleum as a steam fuel was discovered, a ship could carry rather more than the equivalent of the coal at present carried in the shape of petroleum; but, as a set-off to this apparent advantage, there would be the cost of the vessels necessary to contain the inflammable fluid, a very small leakage in such vessels being fatal to the safety of the ship, and the loss resulting from the evaporation and general deterioration of the petroleum, which latter is at least ten times as great as with the most fragile steam coal brought into the market.

Even when Mr. Richardson takes the erroneous assumption that petro-

leum has 15 times (instead of 1½ times) the heating power of coal, he fails to show any real advantage in using it. He states, which we do not by any means admit, "that in practice coal used as steam fuel loses one-half its heating power from the impossibility of supplying it with sufficient air in the furnace, especially by the quick mode of firing now in use; full one-half the fuel disappears in the form of dense smoke, and is lost. Now, with petroleum, by the simple method of burning I use, it is extremely difficult to lose any portion of it, the whole is utilised, and so becomes really five times more powerful than coal, weight for weight—1 ton of petroleum making as much steam as 5 tons of coal. As for expense, taking the value of ship freight at 7*l.* per ton, the petroleum at 17*l.*, and the coal at 15*l.* per ton, a return of 14*l.* 15*s.* is made in favour of petroleum." Now, in the first place, it is absolutely untrue that one-half of the heating power of coal is lost in smoke; next, the statement (assuming fair ordinary treatment of the coal) that 1 ton of petroleum will do the work of 5 tons of coal requires confirmation; and, lastly, the consideration of the saving of ship freight is fallacious, because the loss and expense of carrying 1 ton of petroleum would be considerably greater than that of carrying 5 tons of coal, whilst no increased cargo would be obtained, from the fact that to send valuable goods in a ship having petroleum (however stored) as part of its cargo would be as absurd as burning naked candles in a powder magazine.

#### FOREIGN MINING AND METALLURGY.

There is no important change to note in connection with the St. Dizier market. Affairs remain quiet, and devoid of interest. Prices are sustained, and there is no variation to note in quotations. Pig is, however, without demand, and iron has only a very restricted sale, rolled reaching 9*l.* to 9*l.* 4*s.*, and hammered 10*l.* 4*s.* to 10*l.* 12*s.* per ton in warehouse at the works. Pig is quoted nominally at 4*l.* 12*s.* per ton for charcoal-made, 3*l.* 15*s.* to 4*l.* per ton for mixed, and 3*l.* 12*s.* per ton for coke-made. What checks the development of metallurgical industry in the Haute-Marne is the want of combustible at a cheap rate; the Council-General of the department and industrialists are strongly engaged, then, projects of railways intended to unite this metallurgical basin to the coal-groups of the Nord, Belgium, and the Pas-de-Calais. The construction of a proposed line from Vassy to St. Dizier is said to have been decided on. At Paris, rolled iron is quoted at 9*l.* 4*s.*, 9*l.* 12*s.*, and 10*l.* to 10*l.* 8*s.* per ton for Nos. 1, 2, and 3; hoops, 12*l.*; half-sheets, 12*l.* 15*s.*; and sheets, 13*l.* 12*s.* per ton. During October the imports of pig were 14,346 tons, of which 11,430 tons were received by means of warrants; during the months ending Oct. 31, the imports were 163,087 tons, of which 139,426 tons were entered by warrants. We noticed last week that the French Government had been engaged in negotiations for acquiring powerful coal-bearings on the German frontier, so as to free France from the tribute which she now pays to Belgium in the matter of coal. On this head the *Journal des Mines* says:—"At first sight we resolutely reject a piece of intelligence which has no appearance of truth. If the Government comprehends the necessity of largely developing the working of collieries, there is no necessity for buying coal-bearings abroad, so as to enable us to contend against the importation of Belgian coal. We have in France a sufficiency of collieries, of companies, and of workings to enable us to free ourselves from any tribute to Belgium industry, if we will only take a little trouble to do so. Let the Government boldly and energetically improve the position of our workings—let it content only to cut down a few of the old workings, and the advantages which it concedes to railways—and France will soon, like England and Belgium, be provided with the combustible which has become the bread of industry."

The Santander Mining Company has just held its annual meeting. The object of this company is the working of mines of zinc in the Asturias, and the results obtained during the last exercise are satisfactory. The profits of the twelve months comprised between July 1, 1863, and June 30, 1864, amounted to 43,487*l.*, and at the close of the exercise there remained in hand a stock valued at 3067*l.* Various other sums, derived from exchange, commissions, interests, &c., carried the total profits realised during the exercise to 56,987*l.* The general expenses of administration, and special expenses, working, and other, amounted to 13,440*l.* The net profit of 43,447*l.* was divided into a share capital of 198,000*l.*, and a current "passive" of 12,920*l.* The net profit of 23,447*l.* was applied as follows:—3200*l.* was carried to the reserve fund; 10 per cent. of the balance, or 2024*l.*, was paid to the manager; and the remaining balance of 18,216*l.* was distributed at the rate of 1*l.* 16*s.* 10*d.* per share, of which 1*l.* 4*s.* became payable on Thursday, Dec. 15, the odd 12*s.* 10*d.* becoming due to the shareholders on July 1, 1865. As regards other joint-stock undertakings, we may add that the Tubize Construction Company (Belgium) will pay on Jan. 5 a dividend at the rate of 7 per cent. in respect to the exercise of 1863-4. The Société de la Nouvelle-Montagne (Belgium) will pay on Tuesday, Dec. 20, 1*l.* 4*s.* per share on remission of coupon No. 11, and 4*s.* 9*d.* per fifth share on remission of coupons Nos. 13, 14, 15, and 16. The Vesdres Mines and Blast-Furnaces Company, at Dolhain (Belgium), will pay, on Jan. 1, a coupon for interest and dividend referring to the exercise of 1863-4 at the rate of 12*s.* per share. The dividend of the French undertaking conducted by MM. Pétin, Gaudet, and known as the "Haute Fourneaux, Forges, et Aciéries de la Marine et des Chemins de Fer," has been fixed for 1863-4 at 2*l.* 10*s.* per share; half this distribution is payable on Nov. 30, and the other half on May 30, 1865. The balance of the dividend of the Grand Combe Mining Company for the exercise of 1863 will be paid Dec. 31; it amounts to 1*l.* 4*s.* per share. The Asturias Coal Mining and Metallurgical Company (Spain) has announced this month the payment of the half-year's interest due on its obligations, of 6*s.* per coupon.

A few days since an adjudication took place at La Haye for rails, on account of Dutch railways. This adjudication brought Belgian and English producers into competition with each other, and the Belgian works proved very successful in dealing with their competitors. Three lots, of 1600 tons each, forming the last delivery, were tendered for, and the lowest rates were 7*l.* 2*s.* 9*d.*, 7*l.* 6*s.*, and 7*l.* 12*s.* per ton. The contracts thus obtained will be shared between the Schilling, Scieslin, and Thy-le-Château Companies. The lowest price offered by any English firm was 7*l.* 12*s.* 3*d.* per ton. Messrs. Bailey Brothers, Mr. G. P. Kitson, Messrs. Guest and Co., the Ebbw Vale Company, Messrs. Bolckow and Vaughan, and also a London house, we believe, submitted tenders. The lowest English tender, we understand, was that of Messrs. Bailey Brothers, Messrs. Guest and Co. coming next, the Ebbw Vale Company next, and Messrs. Bolckow and Vaughan next, while Mr. Kitson was the highest of all. Messrs. Guest and Co., the Ebbw Vale Company, Mr. Kitson, and Messrs. Bolckow and Vaughan, appear, however, to have simply tendered for rails, while Messrs. Bailey Brothers included in their offer 100 tons of accessories. While well the victory which they gained over their English opponents, the Belgian establishments do not overlook the fact that they had to deal with a new competitor, which may prove a redoubtable one—we mean Prussia. That country which a few years since, supplied itself almost exclusively with Belgian or English pig and iron, has seen metallurgical industry rapidly developed in its territory, enjoying, as it does, cheap coal and minerals. At the late adjudication at La Haye, the Sarrebruck Forges Company did not shrink from delivering a tender, although in this particular matter it competed at a great disadvantage, since the rails in question had to be delivered free at Amsterdam. This was a hard condition for the Sarrebruck establishment, situated, as it is, 300 miles inland from the point of destination; nevertheless, its tender did not exceed 8*l.* 5*s.* 4*d.* per ton (rather lower than the offer of Messrs. Bolckow and Vaughan). It is stated that contracts by Belgian firms with England have now ceased. Official tables with reference to the exports of various descriptions of Belgian products during the first ten months of 1864, have just been made up. A marked progression appears in the exports of iron. Thus, the exports of rails, rolled iron, plates, nails, &c., to Oct. 31 this year, amounted to 135,186 tons, against 88,374 tons in the corresponding period of 1863, and 72,399 tons in the corresponding period of 1862. The augmentation has made itself most sensibly felt in rails, and the clientele of Belgium appears to be extending with all countries. The most important markets for Belgian rails and iron are the Low Countries, France, and Spain; in the second rank come Portugal, Italy, England, Switzerland, and the United States; and then Russia, the Zollverein, and Turkey. During the ten months ending October 31 this year the exports of pig were 23,358 tons, against 19,572 tons in the corresponding period of 1863.

With regard to the foreign metal markets, it may be noted that transactions appear to present a little more animation at Paris, and rather more firmness is, accordingly, indicated in prices. English in plates has made 91*l.*; Lake Superior, 104*l.*; rough Chilean, 85*l.*; and Corocoro mineral, 87*l.* 10*s.* per ton. At Havre, Chilean has slightly improved, and the sale is mentioned at 60 tons at 87*l.*. The circular of a Havre broker states that during the past month Lake Superior has not given rise to any transaction, holders demanding prices which are high with reference to other descriptions. The present stock is composed of 180 tons, of which about 60 tons are Minnesota. Of Chilean, the total sales in November amount to 478 tons in bars, and 25 tons of small refined ingots; the stock is 6500 tons. Deliveries of Corocoro mineral have been rather considerable, but in consequence of deliveries to works the stock has somewhat diminished; it is now composed of 600 tons. Old copper is a little sought after, and has been falling at Havre. There has been a better demand at Cologne, and at Berlin and Hamburg copper is in a good position; stocks are reduced, and notwithstanding that the demand is quiet, holders maintain former rates. The position of the tin markets exhibits no improvement. At Amsterdam and Rotterdam, Banca is offered at 58*l.* 5*s.*, but offers do not go beyond 58 florins. The Paris market has been without much business, and prices have fallen, Banca having made 103*l.*; Detroit, 101*l.*; and English, 101*l.* per ton. A lot of 1172 saumons of Detroit has been sold at Bordeaux at 102*l.* per ton. Cologne has been quiet, and without change in prices. At Berlin the article, which had slightly revived, is again neglected, and is only purchased to meet the strict requirements of consumption. Some small lots have been dealt in at Hamburg at former rates; at Stettin prices have been nominal. There has been scarcely anything doing in lead at Paris, and prices have remained without variation, rough French making 21*l.* 4*s.*, and Spanish 23*l.* per ton. During the past month no great amount of business has been done in lead at Havre; the imports comprise 3211 saumons, and 822 saumons of argentiferous minerals. In presence of a reduction in the stock, lead maintains its value well at Hamburg, but affairs remain limited. The tone of Berlin is good, consumption continuing to make considerable purchases. The Cologne market is firmer. Stobberg lead has also been rather better held at Rotterdam, at 11*l.* 5*s.*; other marks without variation. There is no amelioration to notice in zinc. On the Paris market the article has been completely neglected; rough Silesian remains without variation, at 25*l.* 4*s.* per ton. The Breslau market has been a good deal shaken in consequence of a considerable lot—about 30,000 cwt.—having been offered for sale; purchasers display great reserve. The advices with regard to tin from Hamburg are also not very favourable.

The Verviers Chamber, in its annual report, gives some interesting information on the mines of that arrondissement. The district comprises four mining companies in activity, while ten are inactive; several applications for concessions, or extensions of concessions, are still under consideration. The Monthem-Levant Company worked in 1863 (from Jan. 1 to July 15, 1863) tons of pyrites; the sale was 2580 tons, representing a value of 1558*l.*. At Rochoux and Onex, the production attained a total of 18,624 tons, and the sale amounted to 19,261 tons, as well in Prussia as in Belgium. At Bleyberg-as-Montzen, the production of zinc and lead minerals amounted to 6258 tons, representing a value of 55,522*l.*. All these minerals, with the exception of 750 tons of black lead, sold both in Belgium and abroad, were treated in the works of the company, and the production of these works in zinc, lead, and silver was 2575 tons, representing a value of 66,520*l.*. These metals were sold in Belgium and abroad. Bleyberg, it may be added, is the only Belgian metallurgical establishment which produces silver derived exclusively from its own minerals. The selling prices, as well as the production of pyrites, continued to decline in the year 1863.

The principal cause of this is the diminished activity of manufacturers of chemical products in England, the principal outlet for their products, the United States, having been seriously affected by the prolonged civil war still raging unhappily in the great republic. At the same time, the best pyrites are still saleable at remunerative prices, and find buyers abroad, even in competition with the pyrites of Spain, Westphalia, France, and Sweden. As regards ordinary pyrites, which can only be utilised in Belgium in special furnaces, such as few industrialists possess, producers find themselves under the necessity of forwarding them to Prussia, France, and even England. With respect to this description of minerals, which are relatively of very low value, it would be only equitable that important reductions in transit tariffs should compensate for the prejudice which results to producers from the police regulations now in force in Belgian manufacturers of chemical products. The Chamber observes that there is no important improvement to notice in the prices of zinc and lead; at the same time prices of indigenous minerals sustain themselves very favourably for producers, the extraction not suffering to meet the wants of the metallurgical works of the district. Important reductions of transport rates would alone permit foreign extractors to supply the local works so long as quotations remain at their present rate. A Customs anomaly exists which appears to call for some rectification or modification. At present, zinc and lead obtained from German sources of supply are admitted free into Belgium, while a duty is charged when these metals enter Prussia; lead, for example, being subject to a duty of 15*s.* per ton, or nearly 4 per cent. This arrangement is said to enable Prussia to take Belgian minerals, and then to compete with Belgium in Belgian markets—a result which has actually occurred of late in deliveries of lead to the State.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

Dec. 15.—The Coal and Iron Trades here continue very brisk: indeed, the ironworks and engine-works, and manufacturers generally, were certainly never better off for orders at the close of the year than at present. The iron trade certainly, that is the pig-iron and rail and bar trade generally, shows some signs of weakness, and prices are drooping a little; but in the face of enormous extensions, this is only a natural consequence, and prices are still sufficiently remunerative to cause speculation. On the Tees new works, some of them of considerable magnitude, are rapidly springing up, and, as was noticed lately, a great increase in the make of finished iron, bars, &c., may be looked for during the next year. On the Tyne improvements of the greatest importance are in progress, which will eventually make Newcastle and Gateshead and suburbs more than ever the metropolis of the North: at the mouth of the river, although the piers and approaches are in an unfinished and very incomplete state, yet the depth of water, and other advantages, are so great as to constitute the Tyne already a harbour of refuge. During the last four days the weather has been most stormy and threatening in the North Sea, and numbers of vessels, both large and small, have run to the Tyne for shelter, and have passed in with safety. At various points in the river, too, but particularly at Bill Point, where a most awkward bend occurs, the channel is being made deeper, and also curves reduced or taken off. Lastly, the old bridge at Newcastle is about to be removed, and a new one substituted, which will admit of the passage of ships up the stream. When this important improvement is effected a complete change will take place in the position of the various collieries, ironworks, &c., west of Newcastle. At present the expense of transit to and from these numerous works of the produce, imported and exported, are heavy. Numbers of lighters are employed in this traffic, and many of the works have to bear heavy railway dues; these will, of course, be very materially reduced when ships can ascend as far west as Blyth, which will be the case in a few years, and a considerable development of the trade of the various ironworks, brickworks, &c., situated west of Tyne Bridge. The Coal Trade continues very good, the demand for all descriptions of coal and coke being excellent, and prices are generally advancing; indeed, the prospect for the ensuing spring is extremely satisfactory. The men are, of course, well employed, and, as a rule, earning good wages.

A special meeting of the Stockton and Darlington Railway Company was held on Wednesday for the purpose of settling whether the shares held by the said company in the Consett Ironworks should be sold, an excellent offer having been made for them by Mr. James Wilson and Mr. J. W. Pease. The number of shares held is 6400, with 7*l.* 10*s.* paid upon each, 2*l.* 10*s.* per share being still liable to be called up. The sum offered was 65,000*l.*, and ultimately this sum was accepted, and the sale of the shares agreed upon. There was some opposition to this course, Mr. Benson, of Newcastle, stating that at least 70,000*l.* should be got for the shares, and there is little doubt that more could have been got for them; but the bargain is, no doubt, a good one for both parties, and this shows clearly that a great improvement has taken place in the position and prospects of these important ironworks, and in the iron trade generally in this district.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Dec. 15.—No improvement can be reported in the demand for manufactured iron, and none could have been anticipated at this period of the year, when buyers always keep down their purchases, and are the more certain to do so at the present moment, when the idea prevails that prices may be lower. This notion finds little favour, however, in South Staffordshire, several of the leading manufacturers being understood to be adverse to the step. Whilst trade is now very dull, it is pretty certain that stocks have been allowed to run down very low, especially in America, whilst the railways in course of construction, or about to be made, will require a large quantity of iron. There are, therefore, reasons for supposing that a better demand will be experienced in the spring; and this is the more probable, as a short time will show the results of the present military operations in the North American States, and a distinct prospect of war lasting there for another year, or any clear indication of a termination, would give a stimulus to trade, which is checked by the fear of what may possibly happen. So long as this American struggle lasts it will cause ebbs and flows in trade, as so many operations would be vitally affected by any turn in affairs.

The question of the Wages of the Puddlers and Millmen is to be considered at a full and special meeting of ironmasters, to be held at Birmingham, on Thursday next. The only tangible argument which the colliers had for resisting the reduction of wages during the late strike was, that whilst the reduction of the price of iron was assigned as the reason for reducing their wages, no corresponding reduction was made in the wages of the men at the mills and forges. The reason for that was, that there had been an exceptionally large demand for puddlers, consequent on the opening of new iron districts, and of the long continuance of low prices deterring persons from entering the trade as underhands, which is a preliminary step towards managing a furnace. It has, however, been felt since the reduction in the price of iron that this state of things cannot long continue, and the conviction is now almost, if not quite, universal, that a reduction in wages must be made. Whether the puddlers will readily submit to it or not remains to be seen; if they should resist, a hard struggle is probable, as the reduction will not be decided upon without the general concurrence of the whole trade. The circulars calling the meeting are sent not only to members of the association, but to all engaged in the manufacture of iron in the district. The North Staffordshire ironmasters are understood to meditate a similar step.

The trial of 19 colliers, arrested on the morning of Oct. 20, as resisting the efforts of the police to prevent some two thousand miners from marching with music past a number of the coal pits of Earl Dudley, with a view, as alleged, to intimidate the miners who had returned to work there, took place on Saturday last, before Mr. Justice Byles, at the Stafford Winter Assizes. The case for the prosecution was simply this—It was proved that some of the defendants attended a mass meeting, at which Thomas Griffiths, who was clearly the leader of the strike, presided, where it was arranged that meetings should be held at half-past four in the morning, with music at various parts of the district, for the purpose, as Griffiths expressed it, of "drumming out the black legs." These morning meetings were held regularly, and the plan was for large bodies of men to traverse the roads leading to the different pits, beating drums and blowing whistles, and as they passed the pits where anyone was supposed to be at work shouting and waving their caps. The result was that men who wished to work were conveyed to and from their work in vehicles, and as well known, many who had gone to work were induced to cease working, and many disposed to go were kept away by these demonstrations. The police at length announced that this course of proceeding would be stopped, and ultimately a decisive course was taken. A line of policemen was wheeled across the road along which the procession was marching, the acting chief constable having previously in vain endeavoured to induce the leaders of the procession to turn back. The crowd pushed on against the police, who resisted, and after a short and sharp encounter the prisoners were arrested, and the rest of the crowd dispersed. It was clear that, apart from the question of these morning assemblies, the miners behaved with considerable self-restraint, and the actual cases of violence were far less than might have been anticipated. Mr. Justice Byles laid it down distinctly that these early assemblies and marchings in array, for the purpose of preventing men going to their work, were illegal, and consequently the police had a right to stop them, and resistance to the police in doing so exposed those who resisted to criminal proceedings. The counsel for the prosecution not desiring to press severe punishment, and the Lord-Lieutenant of Staffordshire (the Earl of Lichfield) having very feelingly spoken sympathetically in mitigation of the punishment of the men, who he thought had been misled, and observing that the restoration of peace in the county might be a reason for lightening the punishment, the learned judge only sentenced nine of the men to a month's imprisonment with hard labour, releasing the rest, who had taken a less conspicuous part, on their entering into their own recognisances.

In the Supplement to the *Mining Journal* of Saturday last an article appears in which the often-repeated allegation is made that the destruction of life by mining accidents in Staffordshire is much greater than in any other district in the kingdom. This is based upon two sources of information—the returns of fatal accidents by the Inspectors of Mines, and which is unimpeachable; and the yield of coal in each district, as estimated by Mr. R. Hunt. There is no doubt that in the preparation of the Mining Records Mr. Hunt bestows great care; but there is very strong reason to believe that the amount of coal raised in South Staffordshire, if not in North Staffordshire, is greatly underrated. In the first place, there is an important item of allowance coal granted to all colliers, which is not believed to be included; but the main source of the alleged error arises from a very wretched system in the district of gauging coals falsely,



so that a ton often really means 25 and 30 cwt.; it is said in some cases more. If this is so, the mortality in South Staffordshire, in proportion to the coal raised, would be considerably reduced.

Two fatal accidents from falls in mines, which have occurred this week, are clearly the result of the men's carelessness. In one case the deceased, Joseph Matthews, with others, was getting coal as a bandsman in the Old Park Colliery of the Earl of Dudley, on Monday last, and as they were falling by them, and were anxious to get as much as they could, they went into a gateway into which they had been ordered not to go, and where some loose coal lay; a fall took place from a slip, and Matthews was killed.—In another case James Humphrey, an ironstone miner, was getting ironstone in the Gospel Oak Colliery, at a certain rate per ton, when a fall of roof took place, and he was killed. It was shown at the inquest that the custom was to place props at every half-yard or 2 feet, but he had put them at intervals of a yard and a half, and thus lost his life in too great anxiety to realise large wages.—A boiler burst on Wednesday (yesterday) with great force at the blast-mills of Mr. H. B. Perry, at Stoke-upon-Trent, in this county. The place was rendered a scene of ruin, but, most fortunately, only four men were injured. In fact, the boiler was seriously injured. It is said that the boiler was well supplied with water, and that the iron with which it was made was very good. At present the cause of the boiler bursting is simply a matter of vague and contradictory conjecture.

#### REPORT FROM DERBYSHIRE, YORKSHIRE, AND LANCASHIRE.

Dec. 15.—There is very little doing in the Iron Trade, but a cheerful feeling of confidence pervades manufacturers and merchants that there will be a brisk trade doing after Christmas. Stocks are unusually low, but there are sufficient orders on hand for immediate requirements to keep the works in these counties going on full time. There is scarcely anything doing in speculative orders, and continental advices are not very encouraging; but the slightest impulse from any quarter would be immediately felt in the trade. There is to be a special meeting of the iron trade at Birmingham, on Thursday, preparatory to the preliminary one for the 29th, but the opinion of ironmasters in these counties is that there will be no alteration in prices. The rates for pig-iron are rather lower, and it is said that the Cleveland makers, with the view to force sales, have accepted easier terms. Mr. J. Stanley, of the Midland Ironworks, Sheffield, has stopped payment, with liabilities said to amount to between 35,000*l.* and 40,000*l.* This firm has lately become noted for the manufacture of large castings. An attempt was made recently to form a limited liability company to work the concern, but the scheme failed. There has been a moderate improvement in the Steel Trade, and latterly the French Government have bought rather heavily. The home trade in manufactured cutlery is dull, but America and the Colonies are buying more largely than heretofore. Some large castings have lately been made at Rotherham, and the houses generally there are well employed, especially in the brass trade. The Coal Trade is reported to be in a very satisfactory condition in Derbyshire and Yorkshire, with one exception. In Barnsley the Union men are waiting upon the masters, with a view to induce them to compel all miners in their employ to join the Union. Of course the request, most unreasonable as it is, has been refused, one master declaring that before he would submit to such a proceeding, or be a party to it, he would suffer to have his arm severed from his body. The Wigan colliers, too, are demanding an increase in wages, or a restriction of the hours of labour, the latter course being, in their opinion, the successful mode to raise wages. The masters are determined to resist, and if they are compelled to submit they intend to draw supplies of coal from the adjacent counties. With the exception of these disruptions, the trade is exceedingly healthy, and there has been a better demand for coal from the London and Southern markets than for many years past.

An accident occurred at Lord's Colliery, Ashton, by which one man was killed and another dangerously injured. It seems that William Stockport was getting coal, or "holing," whilst James Kenyon was "waggoning," when the coal suddenly gave way, crushing Stockport to death. Kenyon says he was just about to prop the coal when it gave way. The men were well provided with props by the company, and ought to have used them; but, notwithstanding a knowledge of the risk they were running, they continued to "wedge off," until the superstructure gave way.

The Tipton Coal, Coke, and Ironstone Company (to which reference was made in last week's Journal), formed for the working of the mines near Chesterfield, which were originally started by the late George Stephenson, the celebrated engineer, it is reported have all their shares subscribed for, and that as soon as the preliminaries are completed the new company will commence work.

The Kyan Mining Company ordinary half-yearly meeting was held on Wednesday, at the Black Rock Hotel, Sheffield, when Mr. T. J. Parker (the Chairman) gave a brief history of the company, and read the report of Mr. George Maltby, captain of the mines, which was of a satisfactory character, and was adopted by the meeting. The ore raised during the past half-year at the Gleebe shaft was 165 tons 12 cwt., and at Dusty Pit 6 tons 4 cwt. This, with the dues of ore which had been paid to the bar master, and 14 tons on the hillcock, made the grand total upwards of 200 tons. A call had recently been made on the shareholders, but since then some good work had been found, and it was anticipated that no further calls would be necessary. Some specimens of ore were laid upon the table, and the shareholders generally were invited to inspect the mine.

The traffic on the railways are good, and stock is advancing, but in other descriptions of shares in our local markets there is not much doing.

The applications for Letters Patent include—Mr. W. Tongue, of Wakefield, engineer, for improvements in machinery for combing fibrous materials; Mr. John Vaughan, of the Middleboro' and Cleveland Ironworks, for improvements in heating the blast for furnaces in the manufacture of iron; Mr. E. Brooke, of the Field House Fire-Clay Works, Huddersfield, for an improvement in the manufacture of glass-house pots; Mr. Robert Mathers, of Burley-road, Leeds, for improvements in sawing machinery.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

Dec. 15.—The present state of the Iron Trade is, it must be admitted, a matter of considerable anxiety to both makers and buyers. To buyers it is a matter of anxiety, especially if they have bought largely, and the ironmasters, on the other hand, hardly know what to do in reference to the wages paid to the men, which are already too high in proportion to the price of iron. As to whether present quotations will be maintained, or a reduction submitted to, there is considerable divergence of opinion; but, if prices will go down, it is generally agreed that there will then be no alternative but to reduce wages. A meeting of the trade has been called for next Thursday, at Birmingham, for the special object of discussing the wages question, and the decision arrived at there will, no doubt, be adopted in this and other iron-producing districts. At present the works of Monmouthshire and South Wales are fairly employed, and there are no complaints as yet that employment is scarce. Several of the makers have sufficient orders on the books to keep the works going over Christmas, while some to or three—they too are leading houses—are less favourably situated. Buyers, more particularly on export account, show, as might be naturally expected at this period of the quarter, extreme reluctance in entering into engagements; but, once makers decide as to the prices for next quarter, then orders that are now withheld will, without a doubt, be given out immediately. This, perhaps, explains, to a certain extent, the paucity of demand experienced by the two or three firms referred to. Home requirements are still moderately good, while no improvement is to be recorded from New York. Tin-plates remain without change, and much business is not expected to be transacted before the quarterly meetings are over. Although the winter has fairly set in, there is no lack of activity in the Steam Coal Trade. The export demand is brisk, and the steam shipping companies are taking large supplies. The contracts for supplying Staffordshire works are now terminating one by one, and the quantity sent to the Midland Counties has, in consequence, materially decreased. There is a good enquiry for house coal, and coke commands an average sale.

The new blast-furnace which was recently blown in at Ynyscedwyn is likely to prove a decided success. It is by far the largest and most capacious furnace in the anthracite district of South Wales. There have been very few improvements introduced into the making of iron with anthracite, or stone coal, during the last 30 years, the blast-furnaces used for that purpose being much the same now as when Crane's patent was first adopted, but the new furnace at Ynyscedwyn presents many features of improvement. The blast is more extensively and equably distributed throughout the whole furnace than was the case under the old system, and it is worked with a closed forepart, and the men are thus able to work with greater ease, and stand the heat better. Another new feature is a huge bell employed at the top for taking away the gases to heat the stoves. The make of iron from the furnace has been so satisfactory that the company who have taken the works have decided on erecting another on the same principle, but on a considerably larger scale.

**APPEALS AGAINST COLLIERY RATING.**—It will be remembered, that at the last Glamorganshire Quarter Sessions several appeals were heard against the rating of collieries at Aberdare and Gellygaer. The Clerk has now presented a report to the Merthyr Board of Guardians, showing that the result of the appeals has been not altogether unsatisfactory to the colliery proprietors. The Court, at the October Sessions, appointed a special day for hearing the appeals, and upon that of Mr. Cartwright being heard, the rate upon his Tophill Colliery was reduced from 1*s.* 8*d.* to 1*s.* 4*d.* per ton. On the next day the appeal of Mr. Samuel Thomas was heard, when the rate upon his Sguborwen Colliery was reduced from 9*s.* 6*d.* to 7*s.* per ton. The Court then adjourned to December 8. In the meantime several of the appellants came before the Assessment Committee, and upon the information given by the appellants themselves, and by Messrs. Beddington and Hayhurst, whom the committee had engaged to examine and report upon the collieries, the committee reduced the valuation of many of the appellants. In the Aberdare district the rate for the Blisgawer Colliery was reduced from 10*s.* 6*d.* to 9*s.* 6*d.*; and the Lletty Shenkin from 1*s.* to 1*s.* 6*d.*. In the Gellygaer district, Llancaulah was reduced from 15*s.* 6*d.* to 14*s.* 6*d.*; Penallta, from 18*s.* to 16*s.* 6*d.*; Gellygarwall, from 17*s.* to 16*s.* 6*d.*; Church, from 15*s.* 6*d.* to 1*s.* 6*d.*; New Place, from 16*s.* to 1*s.*; and Pwll-yr-Alit, from 15*s.* 6*d.* to 1*s.* The extra tax, however, put upon the coalowners may be judged of by the manner in which the Clerk concludes his report. He says—"Undoubtedly many expect the costs of defending these appeals will be considerable; but when it is remembered that before the recent valuations the Aberdare collieries were at a uniform valuation of 6*s.* and 6*d.*, and the Gellygaer collieries at a uniform valuation of 7*s.* 6*d.*, and that the result of the new valuation and the appeals has been nearly to double the colliery rating; and when it is remembered, also, that every tenant in this large Union, comprising ironworks, collieries, railways, water-works, sawworks, and other manufactories, amounting to

upwards of 348,000*l.* annual rateable value, has been re-valued by your assessment committee, and that out of the whole only two appeals have been heard in a court of justice, I venture respectfully to submit that the labours of your committee have been most successful."

**TRADE OF THE SOUTH WALES PORTS.**—The returns of the coal and iron shipped from the South Wales ports for the month of November have just appeared. The following are the total coal exports for the month, and also for the previous and corresponding months:—

	Nov., 1864.	Oct., 1864.	Nov., 1863.
Cardiff .....	Tons 127,542	Tons 120,718	Tons 138,445
Newport .....	31,482	26,390	18,946
Swansea .....	47,176	42,375	43,333
Llanelli .....	9,817	8,778	6,080

Coastwise, the shipments were as follows:—

	Nov., 1864.	Oct., 1864.	Nov., 1863.
Cardiff .....	Tons 69,730	Tons 75,015	Tons 63,807
Newport .....	26,413	24,230	17,188
Swansea .....	29,093	26,318	42,744
Llanelli .....	14,176	26,161	12,001

The exports of iron were as follows:—

	Nov., 1864.	Oct., 1864.
Cardiff .....	Tons 9428	Tons 7181
Newport .....	3797	7442

The above returns show that a large trade was done at all the ports during the month, although in the case of Cardiff there was a decrease in the coal exports, as compared with the corresponding month; and the shipments of iron from Newport fell off considerably, the cause being the almost total cessation of shipments to America. The coal trade of Newport is rapidly increasing, owing in a great measure to Aberdare coal being now brought down for shipment.

The arrivals at Swansea include—The Coquimbo, from Pau de Azucat, with 520 tons of copper ore, for Richardson and Co.; the Ralph, from Cherbourg, with 134 tons of iron ore, for Crawshaw and Co.; the Annie, from Bilbao, with 141 tons of zinc ore, for Bath and Sons; the Charlotte Clark, from Pau de Azucat, with 580 tons of copper ore, for Richardson and Co.; the Kent, from Caldera, with 104 tons of copper ore and 516 tons of silver ore, for H. Bath and Sons; the Josephine, from Cherbourg, with 130 tons of iron ore, for W. Crawshaw; the Seraphine, from Adra, with 184 tons of zinc ore, to order.

#### NOTES FROM LECTURES BY DR. PERCY, AT THE ROYAL SCHOOL OF MINES—FUELS.

We have already seen that bituminous coals are of two kinds—caking and non-caking. Now, as to the property of caking (that is, of swelling up and forming a compact mass when heated possessed by certain coals), there are some curious and most important points. And, first, as to the cause of this property, we find there is great doubt. Some maintain that it is due to the varying proportion of hydrogen in the coal, but the idea is not borne out by analysis; for, on examining the exact composition of nine varieties of coal taken indiscriminately, the fallacy of this notion is directly proved. That the amount of oxygen present induces the property of caking is also equally fallacious; for there are numerous varieties of coal having the same ultimate composition, some of which cake, whilst others cannot be made to do so. Certain varieties of coal, when freshly hewn from the pit, cake perfectly, but when exposed to the air for some time lose the property entirely. This fact would seem to bear out the impression of some of the French chemists, who hold that the caking is due to the presence of certain volatile matter in coal. One point in this subject demands particular attention, and that is, when we heat a non-caking coal, rich in oxygen, in an open vessel, it will not form coke of the most perfect kind; but if we heat the same coal in a close vessel rapidly a perfect coherent coke is produced, a result which proves that the mode of heating affects the property of caking. Unfortunately, no method has been as yet devised for making coke economically in close vessels, but if such could be introduced an immense boon would be conferred on the owners of coal mines.

Intermediate between the great class of bituminous coals and anthracite lies Kennel coal, a variety so rare as to be commercially of no importance. Of anthracites, which represent the ultimate product of the conversion of woody tissue into coal, there are numerous kinds. They are distinguished from other kinds of coal by their burning with a smokeless flame, and by their not softening or cinder together when ignited. Wood and caking coals, as they exist in nature, are inapplicable for metallurgical purposes; but each, when submitted to certain processes, yield bodies more valuable for many of the requirements of the metallurgist than those from which they are derived; of such secondary products the principal are charcoal and coke.

Now, when a piece of wood is heated without air it becomes condensed, and resolves itself into several products, and there is left behind a solid mass termed charcoal. The wood is here said to be carbonised, and the temperature at which the carbonisation takes place is about 300° centigrade. The volatile products which are evolved during the process are water, acetic acid, tar, &c., and certain gases, such as carbonic acid, carbonic oxide, hydrogen, carburetted hydrogen, &c. Charcoal is extremely porous, and retains the structure of the wood from which it is derived. Good charcoal, when struck, gives a sonorous characteristic ring, breaks with a conchoidal fracture, and should not be crushed under a moderate pressure. It should not soil the fingers, and should swim on water. As sold commercially, charcoal contains from 10 to 12 per cent. of aqueous vapour. Now, the power of absorbing water varies with the temperature at which carbonisation is effected; the lower the temperature the greater the absorbing power. The amount of carbon in beach charcoal is about 88 per cent. Concerning the methods of effecting carbonisation, we shall find they vary in different parts of the world, according to the knowledge of those who carry out the process. The most universal mode, however, is to make it in heaps, somewhat in the following fashion. A sheltered locality is chosen near the forest, and close to an abundant supply of water. The ground being cut so as to incline from a centre outwards, the wood is piled round a centre, which is left hollow, and called the chimney. When made of the required size the pile is covered with turf and wet dust charcoal. Lighted shavings are then thrown down the chimney, and when the wood is thoroughly ignited the chimney is stopped, and holes are opened in the covering near it for the escape of the smoke and volatile products. At first the smoke is thick and black, but it soon becomes clear and white, at which stage these holes are closed, and others opened further down the pile. The object to be kept in view is, to effect the carbonisation from the centre outwards, and from the top downwards, through the pile. When thoroughly carbonised the pile is quenched with water, and the charcoal, after a few days, drawn. Now, in the practical carrying out of this process of carbonisation there are many points to be attended to, and instructions for which are to be found in most books on the subject, but they are inappropriate details for us here.

The second great product of our fuels proper, coke, consists essentially and mainly of carbon, and of the fixed and inorganic matter of the coal from which it is derived. The external character of coke will vary with the character of the coal from which it is made, and especially with the process by which it is made. Thus, coke may be light and porous, or compact and heavy; soft and tender, or hard and resisting; black and dull in lustre, or light grey with bright metallic lustre; and these different characters are produced according to the object for which the coke is intended to be used. There is a point not sufficiently appreciated by practical men about coke, and that is the amount of water it contains, for commercially it is often sold with a large quantity of water, although when exposed to the air it absorbs only 2½ per cent. of its weight of aqueous vapour. Now, the principle of the carbonisation of coal in the making of coke is precisely similar to that of the carbonisation of wood in making charcoal. When we heat coal in a retort the coal will be exposed to different temperatures, that nearest the surface of the retort being hotter than that in the centre; and the products of the destructive distillation to which it has been exposed will vary with the temperature, and it will be found that at a low temperature matters rich in carbon will be evolved, which at a higher temperature will be destroyed; so that as the object should be to concentrate in the coke the largest possible amount of carbon, it is important to avoid too low a temperature in making coke. Coking is effected practically in heaps, or in ovens, the former being principally the system adopted in South Staffordshire and Wales. The ground chosen for the operation is flat, and sometimes paved with brick. In the centre of the spot is built a chimney of loose bricks, some 5 or 6 feet high, and around this chimney the coal is piled, inclining the lumps towards the centre. The pile being made, it is flattened over with coke dust, duly tempered with water. The mode of igniting the pile is to put the ignited matter outside the chimney, but never in it, and to regulate the air a damper is put on the chimney.

Now, in the first part of the process the covering of coke dust is omitted around the bottom of the pile, to allow of the entrance of the air, but the covering in after a short time extended to the bottom. When first lighted, a thick smoke will be evolved, replaced, as the process proceeds, by the characteristic blue flame of carbonic oxide. The ebullition of flame is prevented as far as possible, and after five or six days, when the pile has become carbonised throughout, it is thoroughly watered, and the coke drawn. Numerous ideas have been originated to utilise the waste heat in the making of coke, and one of the most important of these is known as Cox's oven, where the coke is made in a chamber with a double arch, by means of which the waste heat, before escaping, is used to assist in raising the temperature. A great

number of ovens have been devised for making coke, and it would take an immense time to enumerate them all; and let it suffice that we describe the general principles of coking, and say that, practically, it is effected in circular piles, or long ridges, or in kilns like ordinary brick-kilns, or in common chambers, circular or quadrangular, with a chimney at the top or back; or in ovens in which there are flues for utilising the combustible products, or in those in which the flues are at the sides and bottom. Before dismissing the subject of the utilisation of the gaseous products evolved in the manufacture of coke, it is well to point out that, as the great proportion of the heat evolved is sensible heat, therefore, the distance between the escape of the gas and its utilisation should be as short as possible.

In concluding our consideration of the great subject of fuel, we must say a few words on that most important gas, carbonic oxide, now so valuable in the manufacture of iron. For a long time past this gas has been applied as a fuel on the Continent, and especially in Sweden; and now at last its value is becoming generally appreciated in this country, and most of our iron smelters are utilising it, as evolved from the iron smelting chimneys, whence it is brought back, and burnt in a chamber around the stack, thereby raising the intensity of the heat in the furnace enormously. Every new invention for economising our natural fuels, or for utilising the products derived from the combustion of those fuels, is worthy of serious attention, since each atom of natural fuel represents the concentrated sun rays of ages, which, when once broken from the natural bonds by which they are held, can never again be re-united, and utilised as a source of heat by man.

#### ON MINERAL LODS.

Mr. ROBERT HUNT, F.R.S., in a lecture at the Royal Geological Society of Cornwall, said—No class of men can give so much aid in the solution of the problem which we desire to solve—that is, the discovery of the law or laws which regulate the formation of metalliferous lodes—as miners; and in the hope that some of them, when they know what points demand examination, and require to be accurately recorded, will give the world the benefit of their position and experience, I venture to trouble the society with these notes. Two points, and as far as I am aware two only, appear to have been sufficiently noticed to be regarded as settled. These constants, if I may be allowed that expression, are—first, the main general direction of metal-bearing lodes. If we have not a law to guide us upon this point, we certainly have the dim perception of a law, for we find, though the fact has been disputed by some, that there is a connection between the direction of our lodes, and the kind of metalliferous ore in those lodes. We do not find the direction constant in all parts of England, but it certainly is so generally in Cornwall. Still there are deviations, and hence the importance of a record. The second point, which is regarded as settled, is—the influence of dissimilar rocks on metalliferous deposits in the lodes. As far as observations have yet gone on this point, they have had their bearings mainly upon the relations of our clay-slates to the granites, or to the lavas more especially. We certainly do see that there is a close connection between our underground metalliferous deposits and the proximity of granite or slate-rocks; and we also see and hear from the miners of very close relations between our elvan courses and our metal-bearing lodes. We have some information on this point, but not all that we desire. I have placed here a cross-section of the mines mentioned—Copper Hill, Wheal Basset, Wheal Buller, South Buller, and Wheal Uny—in which we have remarkable evidence of the influence of elvan courses on the lodes; and in every case it has been found that the copper products have been made in the lodes, and the elvan courses have been in the closest proximity to each other. The same fact is likewise exemplified in the case of the Clifford United Mines. In these mines the hot water is constantly rising from a greater depth through the fissures, or percolating from above to the lower part of the earth, and then ascending. It may be interesting to mention the opinion which is entertained by the mineagents of the Clifford Amalgamated Mines concerning the phenomena of this hot water. Capt. John Richards says, emphatically:—"I have the experience of 30 years in this mine, and I am satisfied that the water does not come up, but that it comes down." Another agent said to me that, if I could spare the time to go underground, he could show me where the water comes from; adding that Sir Charles Lyell was entirely wrong in saying that it comes from below. I adduce these statements, not as expressing my own opinions, but simply as being those of others. There are other points of the utmost importance, as bearing upon this subject. In a country of well-defined stratified rocks we have an opportunity of observing the condition of the mineral bodies and metalliferous deposits with more exactness than we can ever hope to arrive at in Cornwall. Mr. Hunt then referred to a diagram, showing the position of two lead lodes in Swaledale, and remarked that, in the case of these deposits, it appears to be pretty satisfactorily made out that where limestone is against limestone on either side of the rocks the lode contains a large quantity of lead. I have found, and have been very much struck in finding, all along the north coast, which I have examined carefully, during the last two or three years, certain curious conditions. The under rocks at St. Ives, Portreath, St. Agnes, Perranporth, and extending up to Newquay, and beyond—though I have only examined them up to that point—are formed of an extremely hard slate, which at Newquay develops into a good roofing slate, and is in several parts worked as such. Above this rock, and always taking the same position, we have the killas, which is interpenetrated with quartz veins; above that also we have the true miners' killas—if I may so term it—a soft killas, and varying in colour. I then passed across to the south-west, and found that these three kinds of slate bear the same relation to each other. In all cases, I am told that the lode is materially influenced when in one or the other; and in many cases it appears that the lode, if it does not actually die out, becomes reduced to a very small string when it enters the harder rock. Now, it appears to me important that we should endeavour to obtain from our miners sections such as I have obtained of the lodes in Swaledale, showing the various conditions of the rocks across the country through which the lodes pass, because I believe we should then arrive at some important facts regarding their influence on metalliferous deposits. A very careful examination has been made of the conditions of the mineral veins of the lead mines at Aiston Moor, in the North of England, and it has been found that the principal lodes have a constant relation to the feeders or other lodes which are lateral to them. This fact would seem to indicate that the metalliferous deposits of lead have been greatly influenced or determined by the flow of currents of water through lateral channels into the main lode or vein. In all the lead districts of the United Kingdom, as far as I am acquainted with them, the largest quantity of lead has been found above the present watershed of the country. In the Aiston Moor Mines it has been found greatly above the watershed. The year before last I examined the Cardiganshire Mines, and, with two exceptions, I found that the lead is obtained above the level of the waterford, and in the case of the two exceptions, the lodes were not down to the sea level. When, however, we come to apply this law to Cornwall we find that there is a discrepancy. We hear that the lodes in our lead mines below the sea level, and that being so, we cannot see how the watershed should determine the mineral deposits in the North of England. The deposits of ore in the lodes, however, appear here to be affected by the same conditions as at the Aiston Moor Mines. In the Druids' lode, at Carn Brea, it is found that the largest amount of mineral deposit is met with where the junctions of the lodes take place. The same thing occurs in the United Mines, and in several others; and I am assured by some old experienced miners working in the Old Wheal Vor that the tin deposits there are determined in the same way—that is, by lateral feeders to the main lode, and it is in the opinion of the agents at Wheal Metal that the extraordinary lodes there have been directly influenced by some such conditions as these.

**GEOLOGICAL SOCIETY OF LONDON.**—Dec. 7: Mr. W. J. Hamilton (President) in the chair. W. G. Atherstone, M.R.C.S., Graham's Town, Cape of Good Hope; J. Brodgen, Tondra Ironworks, Glamorganshire; Lieut. A. B. Brown, R.A., Gibraltar; F. H. Dickinson, Kingston, Somerset; G. Dowker, Stourmouth House, near Wingham, Kent; G. B. Forster, Rackworth Hall, near Newcastle-on-Tyne; C. Graham, B.Sc. Lond., University College, London; T. B. Lloyd, Spring Hill, Birmingham; W. C. Maclean, Great Yarmouth; W. Molyneux, Branton Cottage, Burton-on-Trent; Wm. Prosser, M.R.C.P., Wilmsham, near Manchester; J. E. Randall, Burne Lodge, Cornwall; J. W. H. Richardson, East Parade, Leeds; H. Rudolph, M.B., Lond., M.R.C.S., of Port Elizabeth, Cape of Good Hope, Gower-street, Bedford-square, W.C.; the Rev. R. N. Russell, M.A., Beauchamp Rectory, Stoney Stratford; W. F. Stoddart, North-street, Bristol; the Rev. R. B. Watson, B.A., F.R.S.E., Bruntsfield-place, Edinburgh; and J. H. Willis, Houndscroft-place, Plymouth, were elected Fellows.

The following communications were read:—  
1. "On the Geology of Otago, New Zealand," by James Hector, M.D., F.G.S.: in a letter to Sir R. I. Marchison, K.C.B., F.R.S., F.G.S. The south-western part of the province of Otago is composed of crystalline rocks forming lofty and rugged mountains, and intersected by deeply cut valleys, which are occupied by the arms of the sea on the west, and by the great lakes on the east. These crystalline rocks comprise an ancient contorted gneiss, and a newer (probably not very old) series of hornblende slate, gneiss, quartzite, &c. Eastwards they are succeeded by well-bedded sandstones, shales, and porphyritic conglomerates, with greenstone slates, &c., in patches, all probably of lower Mesozoic age. Then follow the great auriferous schistose formations, which comprise an upper, a middle, and a lower portion; and upon these occur a series of tertiary deposits, the lowest of which may, however, possibly be of upper Mesozoic date, while the upper, consisting of a freshwater and a marine series, are unconformable to it, and are decidedly much more recent. In describing the auriferous formations, Dr. Hector stated that the quartz veins occurring in the schists were not true "dissure reefs"—that is, reefs that cut the strata nearly vertically and have no false back, or wall, independent of the foliation planes—but are merely concretionary laminae that conform to the planes of foliation; the gold occurs segregated in the interstices of this contorted schist, but is rarely found *in situ*. Dr. Hector concluded with some remarks on the early tertiary volcanic rocks, observing that the period of their eruption must have been one of upheaval, and that the great depth of the valleys, which have been excavated by glacier action since the close of that period, proves that the elevation of the island, at least in the mountain region, must once have been enormously greater than it now is.

2. "Note on communicating the Notes and Map of Dr. Julius Haast, upon the Glaciers and Rock-basins of New Zealand," by Sir R. I. Marchison, K.C.B., F.R.S., F.G.S.

3. "Notes on the Causes which have led to the Excavation of deep Lake Basins in hard Rocks in the Southern Alps of New Zealand," by Julius Haast, Ph.D., F.G.S.: communicated by Sir R. Marchison, K.C.B., F.R.S., F.G.S.

4. "Note on a Sketch Map of the Province of Canterbury, New Zealand, showing the glacial during the Pleistocene and Recent Times, as far as explored," by Julius Haast, Ph.D., F.G.S.: communicated by Sir R. I. Marchison, K.C.B., F.R.S., F.G.S.

The following donations to the society's Museum were exhibited:—Fossils from the Carboniferous Limestones, Lias, Inferior Oolite, and Chalk of England, and from the Neocomian Strata of Nice, presented by Alan Lambert, F.G.S.

On Wednesday, the following papers will be read:—1. "On the Coal Measures of New South Wales, with Splinters, Glossopites, and Lepidodendron," communicated by the Assistant-secretary.—2. "On the Drift of the East of England, and its Divisions," by Searles V. Wood, Jun., F.G.S.

**AUSTRALIAN DIAMONDS.**—Diamonds have from time to time been found in the Ovens district, Victoria. Two were recently found by a man named McGill, in Finn's claim, on the Woolshed. One of these is said to be worth about 8*l.* in its present state. These make seven diamonds found in the same claim. There has never yet been any systematic search in this district for precious stones.

**A LOCOMOTIVE** from Spain has passed through the Pyrenees into France, along the new series of tunnels, about 40 miles in length. This was merely a trial trip, and it was perfectly successful.



## EXCHEQUER BANK NOTES—No. III.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—The practice of attempting to restore the finances of the country by raising the rate of interest, is short-sighted and ridiculous. The Bank raises the rate of interest with the object of drawing gold from other countries and filling its own coffers. This is robbing Peter to pay Paul. The immediate result is, that other countries are obliged, in self-defence, to raise their rate of interest to the same rate as the Bank of England, so that they may prevent the gold going out of the country. A strife for gold between the different countries ensues, and a crisis which begins at London spreads to every country in Europe. The relief which the Bank gains in this way is thus only temporary, and it is a relief that is gained at the expense of a crisis, which throws back the trade of the world for years, and involves much distress, not only in England, but throughout the world. When will our legislators be wise, and give up their foolish reliance on a metal, which is as certain to prove false and treacherous, as that the sun will rise to-morrow? The *Times* says—"Our system of currency will remain imperfect, until some mode shall be discovered of enabling it to apportion the supply and demand for currency, without reference to the influx or efflux of specie." This important announcement shows great discernment on the part of the writer, for it goes to the very root of the evil, and points out where the remedy is to come from. The discovery here alluded to I claim to have made, for I think I am right in saying that I have been the first to propose a plan for making our currency to a great extent, if not entirely, independent of the supply of gold. To carry out this great principle we must come to an issue of paper money that is inconvertible into gold, for unless we do that we cannot arrive at that state of perfection which the *Times* desires.

When the question of reforming the currency was advocated, in 1857, a reduction in the standard was demanded, whereas, by my proposal, no alteration of the standard is involved. The existing standard is  $\frac{1}{2}$  oz. of gold, or thereby, to 11. sterling, and that standard I propose to recognise in the issue of Exchequer bank notes. When a prejudice existing in the public mind against an inconvertible currency is spoken of, we must recollect that that prejudice is mixed up with the idea of reducing the standard, but as I propose no such change of standard, I hope your readers will not do me the injustice to suppose that I give ear to any such crotchets.

A money crisis must arise from one or other of two causes, or a combination of both:—1, from a want of capital; or, 2, from a want of a good and sufficient circulating medium. While the first cause (the want of capital) is natural, and admits of no remedy, the second cause (a want of good currency) is distinctly removable. It is one of the primary duties of the Government to provide the nation with a safe and convenient currency; and as the currency of this country has been found both unsafe and insufficient, the Government is bound, in justice to the people, to make such reforms as may be necessary to the perfection of the system.

The question now arises, has the present crisis come from the want of capital, or from the want of a good and sufficient currency? I say it has arisen mainly, if not entirely, from the want of a good currency. Capital is of two kinds, "fixed" and "floating." The floating capital, which is available for becoming fixed, consists of the savings of the nation. For the sake of argument, let this floating capital be set down at 50 millions per annum, or about ten per cent. on the national income. If more than that sum be annually laid out on railways and other fixed property, capital will be scarce, and a crisis will ensue. But if we do not fix more capital than our savings amount to, no crisis can occur from the want of capital. I am of opinion that we have not been fixing capital beyond the amount named since the crisis of 1857. If that be so, it follows that the present crisis has not arisen from the want of capital, but from the want of a sound and sufficient system of currency.

But it is time to come to business, and state distinctly the nature of the new species of money I wish to introduce. Here is a draft of the proposed Exchequer Bank notes—"1000. sterling. This Exchequer Bank note, for which the full sum of 1000. sterling has been paid to Her Majesty's Treasury in gold and Bank of England notes, is a legal tender within the United Kingdom, and available for the payment of debts and liabilities, and shall at all times rank of equal value with 100 sovereigns of the current coin of the realm. This note will likewise be received at the Custom Houses and Inland Revenue Offices in payment of duties and taxes." It will be observed that these notes will be entirely different from Exchequer Bills, which are not a legal tender. They will likewise be different from ordinary Bank notes, which are convertible into gold. The issue, therefore, of Government notes will not interfere with the present currency of the country, but will only supplement and support it. Instead, therefore, of the banks having any jealousy or dislike to the innovation, they will hail its introduction with open arms, for it will consolidate and strengthen the entire system. Banking is unsafe owing to the infirmity of our currency system, which exposes the Bank to a run for gold in payment of their deposits and notes; but when there is an ample supply of Exchequer Bank notes to fall back on banking will become as safe as any other business. When we have a substitute for gold no bank can fail which is possessed of means, which cannot be said at present. Look at its history in past years, and you will find how many banks have failed who had ample means, but were obliged to stop payment in consequence of the want of gold, but with the new system that can never happen. It will be understood that I do not propose an unlimited issue of Exchequer notes; on the contrary, I distinctly limit the issue to 20,000,000., which will, probably, be sufficient to give entire security to the currency and banking of the country. It is essential to my plan not to pay interest on Exchequer notes, for that would complicate every transaction, and make the notes less available for every-day business.

Having now stated the nature and object of the proposed Government notes, the question arises will they ever become depreciated? I reply, that they will not. It will not be legal for the Exchequer to issue notes unless the full price has been paid for them; and nobody would purchase notes of them at the full price if they could buy them in the market at a discount. It follows, therefore, that the new notes can never fall to a discount, or be depreciated in value. Exchequer notes, as now defined, cannot be called fictitious money, for the full sum they represent will have been paid for them in gold and Bank of England notes. They will pass from hand to hand, and be the means of transferring the money they represent from one person to another. The Bank of England will at once purchase large quantities of these notes to hold against their own issue of notes. Large sums will likewise be taken by the private banks in England, Scotland, and Ireland to hold against their issue. These sources alone may be expected to absorb the quarter part of the proposed issue of 20,000,000.

Since the above was written, I have seen two letters in the *Mining Journal* which disapprove of my scheme, without attempting any refutation of it; and as condemnation without refutation amounts to nothing, I might have passed them over in silence. For the sake, however, of meeting every possible objection, I will now refer to them very briefly. The first letter alludes to the assigns of the first Napoleon, and the last to the greenbacks of Abraham Lincoln, and both writers assume that my Exchequer Bank notes will be the introduction of a similar system into this country. I deny that there is any similarity between the two systems, for my issue of notes is limited to 20,000,000., while theirs is without limit; and while Napoleon and Lincoln sell their issue at a depreciated value, the proposed notes for this country cannot be issued except at the full value. The best system in the world may be ruined by overdoing it—for instance, credit is good in moderation, but certain ruin if it be overdone. Not only do I limit the amount of issue, but I make it a condition that the notes shall not be of a less value than 1000., so as to interfere with the general currency of the country as little as possible. My proposal is based on the assumption that there is a real want of inconvertible notes. If, however, it be found on trial that no such want exists, no Exchequer notes will ever make their appearance; but if such a want really exists, they will be taken by the public with eagerness. The objections, therefore, which have been raised by your correspondents, which are based on the assumption that the proposed Exchequer notes will be depreciated in value, fall to the ground; for that can never happen if my plan be carried out in all its integrity. It will only be by the abuse of the plan, and not by its use, that any evil results can follow; and it is not fair to estimate the value of any reform on the assumption that it will be abused. We have only to surround the plan with the necessary checks by Acts of Parliament, and I am happy to say that in the present instance these checks can easily be made sufficiently stringent to meet any possible contingency.

I shall conclude by stating the leading benefits which the introduction of Exchequer notes promises to confer on us:—1. It will for ever prevent the recurrence of a monetary panic, arising from the want of gold, or the fear of that want. 2. We shall have full confidence in the soundness and stability of our system of banking and currency. At present, even in the most prosperous times, there is a constant looking forward to a crash, while

during the crash all confidence in the system disappears, and a state of chaos ensues.—3. We shall be protected from any risk of runs on the banks for gold, as they will be enabled to pay their liabilities in Exchequer notes, and as they will be bound to hold such notes to the extent of two-thirds of their issue.—4. The monopoly of issuing notes by the Bank of England being withdrawn, the trade and credit of the nation will no longer be at the mercy of any one banking establishment.

The loss occasioned by money crises may be estimated at 100,000,000. sterling every 10 years at the very least. Such being the fearful loss occasioned by the present imperfect system of currency and banking, the benefit of the proposed new system to all classes of the community may be estimated. And seeing that the adoption of Exchequer Bank notes will for ever prevent the recurrence of these fearful scourges on the industry and wealth of the nation, I trust I need offer no apology for thus bringing the proposal fully and fairly before the public.

A. ALISON.  
75, Sloane-street, Dec. 12.

## SILVER MINING IN NORWAY.

For the last few years considerable attention has been directed to silver mining in Norway, owing to the existence of an English company for developing the East Kongsberg Silver Mines, which are, without doubt, amongst the richest for native silver in the world, requiring only capital and skill to make them remunerative to the shareholders. The Government, as most of the readers of the *Mining Journal* are already aware, has granted to the company the exclusive right to explore the silver mines under about 50,000 acres, the property being held by the company in perpetuity, at a yearly rental of 96*l*. Although on the old maps of Kongsberg the silver district is represented to contain only 34 silver mines, it might be considered certain that there are also many mines yet unexplored. The town of Kongsberg contained manufactories of iron, steel, gunpowder, and safety-lamp; there was an ample supply of timber in the neighbourhood, water could be obtained in abundance, and there were plenty of labourers. The services of trustworthy mining captains, theoretically and practically educated, and well acquainted with the district, could be obtained; indeed, the country generally afforded the greatest facilities for the successfully carrying on of an extensive mining enterprise in the hands of an English company, with plenty of money and spirit. There is probably no mining district in which more reliable reports of the ancient workings can be obtained. So eminent an authority as Bergmann states that the mines of Kongsberg, in Norway, were in the middle of the last century the richest in Europe. They yielded from 1728 to 1768 about 649,270 lbs. of silver, equal in value to nearly 2,000,000*l*. sterling (50,000*l*. yearly). Native silver was the chief form in which it was found, but they produced also the sulphuret and red silver ores.

In 1833 a commission was appointed by royal decree to investigate the silver mines at Kongsberg, to project a detailed plan for their working the stamping mills and the smelting house, as well as for the administration of the works which ought to be carried on, the number of miners to be employed, and further consider the question of the working by a company in which the Government was to participate. The report of the commission was printed and published at Christiania, about two years after, and from this a large amount of valuable information may be obtained. It is only where the silver vein and the fahrlibron cross each other that silver is to be found, and it is utterly impossible to pronounce anything like an exact opinion as to the probable future produce of any mine in the district. The King's Mine affords a fair illustration how doubtful it is whether any rule whatever has been followed by Nature in the distribution of the silver in the different veins. While the total produce previously had only been tolerably rich—many parts of the mine have not been worth working—most untrivial silver masses had been recently met with in the very midst of the same parts. In one place a massive lump of silver, weighing 1400 marks (11,200 ozs.), was broken out, and it was supposed that this was only half the amount of silver which had there been concentrated in one single mass. About 2000 marks (16,000 ozs.) were in 1832 loosened by only one shot in another part of the same mine, and in 1834 a lump of massive silver, weighing 595 marks (4760 ozs.) was found in a third part of the mine. Now, the miners had not the slightest idea, not even any reliable conjecture, of the existence of these most extraordinary masses of the precious metal before coming in almost immediate contact with them, the sole indication being some few quite uncertain, and often only deceiving, tokens which might have appeared at a distance of at most 2 feet above the silver masses themselves. From this it is pretty evident that the greatest richness may present itself quite unexpectedly, or that complete poverty may be found where there appeared to be a reasonable hope. But it will be still more manifest by the following remarks as to the above-mentioned part of the King's Mine.—One single vein, and that even only a small part of it, about 20 fms. long by 18 fms. high, with a surface of not fully 300 square fathoms, has given a produce which may be estimated at about 90,000 marks (720,000 ozs.) of fine silver; at any rate, this vein is the richest that ever has been met with in Kongsberg, and it might be that its richness surpasses any other known silver mines. When the working commenced there was no suspicion of the concealed treasure, whose discovery was effected by following no other rule than the general one—to search where the fahrlibron and the vein cross each other; and that if anybody has assumed an anticipated opinion of the quality of the crossing, it is more likely that he has thought unfavourably of its richness than the contrary.

Considering how extremely variable the produce of the Kongsberg Silver Mines is, the commission came to the very wise conclusion that the mining at Kongsberg, on account of the above-mentioned peculiarities of these silver mines, ought to be organised in such manner that different mines are worked at the same time, in order to counter-balance, by the combined produce, the fluctuations which the returns of the different mines may possibly show. They considered that if a sufficient number of mines were carefully and judiciously selected, and their working regularly and economically carried on, there was no doubt that the working would be profitable. As it could be safely supposed that the mines were far from being exhausted (many veins, no doubt, remaining untouched), they considered that there was every reason to believe that the remaining total amount of silver was more than sufficient to pay the working expenses, and leave a net profit for the future. As to the mines continuing rich in depth no doubts need exist, since the old Segen Gottes Mine, when abandoned, at the depth of 284 fathoms, still carried silver.

The proposition to work the mines by a company, in which the Government should participate, was condemned as likely to lead to numerous collisions, through the conflicting interests of the Government and the private partners; it was, consequently, decided that the mines were to be worked on Government account only. A more satisfactory evidence of the sagacity and competence of the commissioners could not be required than that afforded by the returns, as they are given in a copy from the official books, of the 25 years which have passed since the meeting of the commissioners. Although the commissioners thought it necessary to warn against any defection if the result the first time should prove less satisfactory, the total produce of the King's Mine from Jan. 1, 1834, to Dec. 31, 1858, was of the value of 1,377,769*l*. which was obtained at a cost of 372,770*l*, leaving a net profit of 1,005,000*l*, or about 44,200*l*. per annum on the average. It is still unascertained how far the fahrlibron of Kongsberg goes, and even many parts of their well-known extent must be regarded as insufficiently investigated, especially the considerable tract from the Anne Sophia Mines to the Lake Wanebrj. In the Skara silver and gold district, where there are 17 mines, the fahrlibron is not at all investigated, but from the commissioners' report it appeared that there was the greatest resemblance to the fahrlibron of the upper and lower rocks (the Government district). The Skara property is at present lying dormant.

By a royal decree of June 23, 1854, it was decided that a reserve fund should be formed of 1,000,000 spdr. (327,272*l*), the interest of the capital being used for the working of the mines in case of need. The returns, to the end of 1862, of the King's Mines showed a profit of nearly 200,000*l*. on the preceding seven years' working; a more conclusive proof of the richness of the Kongsberg Mines could scarcely be desired. The present district reserved for Government operations is about 13 English miles long, and contains on the map about 150 silver mines, formerly more or less worked, called mostly by royal names. Only two mines are worked, owing to a law passed in the Parliament of Norway, that not more than 400 men shall be employed in these operations, which are to include mines, stamping mills, dressing-floors, smelting house, powder mills, &c. After years of discussion and urgent recommendations from the directors of the Government mines to throw open the 150 or dormant districts to private enterprise, the Parliament decided, in 1856, that the recommendations should be adopted. With regard to the East Kongsberg, one largely interested remarks that "no sensible shareholder possesses a shadow of right to expect any dividend from the mines, worked nearly always with want of money, and scarcely more than brought in working order, worked at the utmost by 20 miners, who for about three months got no wages, and manager, book-keeper, cashier, and correspondent combined in one person, named manager, who is meanly paid. Certainly it must be a painful state for a manager to keep order over miners who get no wages for about three months, and what progress in mining can be expected under such circumstances?" He considers, moreover, that if the mines be worked vigorously, and the different mines carried on at the same time, a fair average result will be obtained, because it is well known that many new silver mines must be discovered, from facts already ascertained, and from the common fluctuation of the different mines in full operation.

## COPPER MINING—DEVON GREAT CONSOLS—No. IV.

Copper ore is divided into three qualities; the best being termed "prill ore," the second "dredge ore," and the third "halvans." After the two first have been separated from the third by the processes above described, they have only to be stamped or crushed to render them fit for market. Stamping is performed by iron-headed wooden pestles contained in a framework, which are lifted by cams on a wheel, and fall by their own weight on the ore placed beneath. Stamps driven by water power are in very common use; but at Devon Great Consols the work is performed by crushers driven by steam. The ore falls from a hopper between two large iron rollers or "rolls," which work into each other, and rapidly revolve. As the crushed ore falls from the rolls it encounters a sieve. This causes that which has not been made small enough to fall to one side into a huge wheel, which brings it up in a scoop disposed around its interior circumference to the upper story of the mill, whence it passes between the rolls again. The dressing of prill and dredge ore is completed when they have been crushed to the required fineness.

Crushing is, however, only the beginning of the end with the halvans, the ore in which is disseminated throughout a large quantity of refuse matter, which of course has to be got rid of, as far as that is possible to be done. This end is attained by the aid of water, and the operation of the laws of specific gravity. These agents are applied to the work in a singularly ingenious and effective manner at Devon Great Consols, the credit of which is due to the chief dressing agent of that concern, Capt. Isaac Richards. We can only indicate briefly the character of the very extensive halving and dressing arrangements upon this mine, which are well worthy of notice, as illustrating the economical results of well-applied skill. The truth of this observation will be patent from the fact that nothing that contains so apparently insignificant a proportion of metal as 4 per cent. is thrown away.

The stuff is washed in mechanical solution from the halvans crusher by a stream of water, in which it passes along to the dressing machinery, which sorts it, before the separating process begins, into eight sizes. The finer portions, called in miners' parlance, the "silms," are the first to be separated. The laund, or wooden channel conveying the ore-charged water, terminates in a little cistern. In the bottom of this there is a pipe, through which water flows from a height of some feet, and forcing its way up

keeps the contents of the cistern in constant agitation. The result of the continuous movement is to drive the finer particles of the ore stuff—which are almost in a state of dust—to the top, whence they run off into the channel, by an outlet so constructed as only to permit the passage of the surface water. The separation of the remaining seven sizes is effected by round revolving riddles, and by a sizing wheel, in the buckets of which the heavier parts of the stuff are deposited, and washed out again into a launder, by the force of jets of water coming through pipes. After the sizing of the crushed halvans the process of separation is carried on by means of jigs and round "buddies," the former taking the rougher and the latter the finer portions. It is necessary in the jigging should be successful that all the stuff in a machine should be as nearly of a size as possible; and the same remark applies to the buddies, the nature of which has now to be explained. The buddies in use at Devon Consols are round shallow pits, in the centre of which there is a large upright funnel. This funnel is made to revolve on a pivot by water power, and a launder conveys into it the water carrying the ore stuff. The water and stuff run out again by an opening immediately below—the outlet revolving with the funnel, so that an equable flow over every part of the buddies is secured; whilst a piece of wood sweeps round upon the surface and keeps the solid contents of the apparatus smooth. A buddy operates in a very simple, but none the less effective, manner. As the water issues from the central aperture it has a considerable amount of force, which it, of course, loses as it operates over a larger area in flowing to the circumference. The effect of this diminution of power is this—that whilst at the centre the water is able to move the grains of ore, in its progress to the circumference its force is reduced, and it is able only to move the refuse, which is considerably lighter than the metalliferous matter with which it was mixed. Thus the richest ore collects in the middle of the buddy, and the worthless sand at the outside, the quality of the contents graduating from one to the other. The refuse is thrown away, and the remainder again buddied, the process being repeated until the ore is considered sufficiently pure. The silms are treated in what are called silms dressing machines. The silms water flows on to an endless belt of painted canvas, forming an inclined plane, continually moving upwards. The water flowing off leaves the solid matter on the canvas; and a stream of clean water then washes off the lighter—the refuse—portions. The ore remains on the canvas until its position is reversed, when it falls into trucks placed underneath to receive it. These silms frames are Brenton's patent, but have been considerably improved since their introduction at Devon Consols. Before they were brought into use the silms were dressed by a process called trunking. The whole of the numerous riddles, jigs, buddies, and frames at the main halvan floor are worked by water power.

The water flowing from the dressing of the halvans deposits its sand in pits formed for the purpose; and then passes through filtering tanks before it is allowed to fall into the Tamar—of which stream, by the way, the Devon Consols Company are the lessees. Our notice of the dressing operations at this mine would be incomplete did we omit to state that the dressing floors, &c., are well furnished with tramways, inclines, and other means of economising labour; and that sheds are provided to shelter the people whilst at work. The ore crusher will crush twenty tons per hour; the halvans crusher sixty tons in the day of nine hours.

One of the surface operations at Devon Great Consols is peculiarly interesting, as an inexpensive and effective application of a scientific process. We allude to the precipitate works, which are there carried on more efficiently, and it is said to a larger extent, than at any other place. The water from copper mines holds that metal in chemical solution, which is the cause of its poisonous character. By the process of precipitation the copper is taken from the water in a marketable state, with the additional advantage of rendering the fluid less hurtful, if not entirely innocuous. When the water is filtered for precipitation all that is necessary to be done is to let it flow over pieces of iron. The copper is then immediately deposited, and the iron taken up instead, in its turn to be thrown down as an ochreous oxide. Usually this operation is conducted in shallow pits—called strips, divided breadthways into compartments. The great objection to this plan is that by it the ochre—which forms most rapidly in summer—and the copper become mixed, and inasmuch as their specific gravity is much the same cannot be separated. Captain Isaac Richards has, however, contrived a mode of proceeding which entirely meets and overcomes this difficulty. He has erected decagonal wooden cisterns, several feet across, in the tiled bottom of which the iron is placed. In each cistern is what he calls a sprinkler—a hollow wooden framework poised on a pivot, with several radiating arms, nearly as long as the cistern's radius. The water having been filtered is conveyed by a launder to the funnel-shaped centre of this framework, into the arms of which it flows, and issuing thence from holes pierced in their sides gives to the machine a rotatory motion by its impingement against the air. In this way the water is sprinkled equally over the whole of the iron in the cistern, without being permitted to lie upon the metal, flowing out at the same rate at which it enters, and washing with it the deposited copper, which falls free from any ochreous admixture into a pit immediately outside the place of exit. The water is run in succession over two sprinklers, and is then filtered from the iron in solution in an ochre pit, by Capt. Richards's excellent plan—which is in process of considerable extension at Devon Consols—therefore, both the copper and the ochre are marketable, and the waste is of a very insignificant character. It takes about three tons of iron to precipitate a ton of copper; and a considerable portion of that iron would be useless for any other purpose, in consequence of the previous action of the mine water upon it. A more profitable way of disposing of the iron scraps that of necessity accumulate about such a large establishment it would be impossible to devise. They are simply broken up to the proper size and cleaned from rust by being put into a closed cylinder worked in water by a water-wheel, in which they rub against each other. The precipitate works themselves require scarcely any labour. The iron has only to be put in and turned over now and then, and the resulting copper and ochre to be sifted and dried—which is most rapidly effected over an engine flue. Otherwise, they are entirely self-acting. It is a singular fact that the copper lies on the cast-iron to such an extent as to require to be removed by scrubbing with a broom, whilst it is washed off by the water from the wrought-iron as fast as deposited. The best precipitate contains about 55 per cent. of copper, and fetches about 45*l*. per ton, the common ore averaging 3*l*. 5*s*. It has been suggested that the very small proportion of copper which remains in the waste sand from the buddies and the jigs should be dissolved out by acid, and precipitated in the manner just described. Whenever this is done there will be practically scarce an atom of metal wasted.

In the next article the conveyance of the produce from the mine to the sampling floor, and the method of sale, will be described.

[To be concluded in next week's Journal.]

**THE SLATE TRADE—ITS STATE AND PROSPECTS.**—The highly satisfactory position of the SLATE TRADE—the demand being so much greater than the supply—renders all information respecting it of general interest. Some three years since a descriptive pamphlet was issued by Mr. T. C. Smith, of which two editions of 5000 each were speedily disposed of; this has now been re-printed, with much original matter from practical authorities in the several districts, and particulars of most of the quarries at work, explanatory of their state and prospects. The new work is published at 1*s*. each, and can be had at our office.

**SALE OF A MINE BY AUCTION.**—Mr. T. P. Thomas submitted for sale, by public auction, at Garraway's, on Thursday, the West Park Consols Mine, with the engine, machinery, materials, &c., in one lot. The auctioneer stated that if the present lease were forfeited, there was no chance of a renewal. The property was bought in.

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Deposit on application, 10s. per share; and on allotment, 25s. per share.

No call to exceed 2s. 6d. per share, or to be made at less intervals than six months.

Applicants not receiving any allotment will have their deposits returned, without deduction or delay.

**DIRECTORS.**

Right Hon. the LORD AYLMER, Melbourne, Canada East.

ALEXANDER BOYLE, Esq., Banker, College-green, Dublin.

ROBERT GRAY, Esq., Banker, College-green, Dublin.

CHARLES E. BAGOT, Esq., Upper Leeson-street, Dublin.

WILLIAM FOOT, Esq., Rutland-square, Dublin.

EDWARD FOTRELL, Esq., J.P., Harcourt-street, Dublin.

WILLIAM JOURNEAUX, Esq., Merchant, Dublin.

GILBERT SANDERS, Esq., Dublin.

EDWARD WRIGHT, Esq., Florville, Eglington-road, Dublin.

**BANKERS.**

The European Bank (Limited), 88, King William-street, London; 3, College-green, Dublin; and their agents in Canada.

Messrs. Henry Chapman and Co., Bankers, Montreal.

**BROKERS.**

James Pim, Esq., 5, Copthall-court, Throgmorton-street, London, E.C.

Messrs. Smyth and Du Bédat, 11, College-green, and

Messrs. McMahon and Fallon, 27, College-green, Dublin.

**SOLICITORS—Messrs. Courtenay and Archer, Leinster Chambers, Dame-street, Dublin.**

Gilbert Sanders, Esq., Hon. Secretary (pro tem.).

OFFICE—47, DAME-STREET, DUBLIN.

This company was formed for the purpose of working the Marrington and Balth Copper Mines in Lower Canada, of which full reports and particulars are set forth in the prospectus; copies of which, with forms of application for shares, may be had from any of the brokers, or at the office of the company, 47, Dame-street, Dublin.

## SCHOOL SHIP.—THE THAMES MARINE OFFICERS' TRAINING SHIP, "WORCESTER," moored off Erith, is managed by a committee of London shipowners, merchants, and captains.

CHAIRMAN—HENRY GREEN, Esq., Blackwall, E.

VICE-CHAIRMAN—C. H. CHAMBERS, Esq., 4, Minster-lane, E.C.

Treasurer—Thomas Cave, Esq., 36, Wilton-place, S.W.

Respectable boys, from the age of twelve to fifteen, intended for the sea, are received on board, and thoroughly educated for a seafaring life.

Terms of admission, 35 guineas per annum.

Forms and prospectus can be obtained on application to 19, London-street, E.C. W. M. BULLIVANT, Hon. Sec.

## Gun Cotton Manufactory.

## MESSRS. THOMAS PRENTICE AND CO., GREAT EASTERN CHEMICAL WORKS, STOWMARKET, SUFFOLK.

This manufactory has been established for the purpose of preparing GUN COTTON, according to the Austrian process, and was opened on the 28th of January last, under the inspection of Baron Lenk. Messrs. Thomas Prentice and Co. are now able to supply GUN COTTON, in its most approved form, either for the purposes of engineering and mining, or for military and submarine explosion, and for the service of artillery, as a substitute for gunpowder.

The advantages of Baron Lenk's GUN COTTON are the following:—

**FOR PURPOSES OF ARTILLERY.**—The same initial velocity of the projectile can be obtained by a charge of gun cotton one-fourth of the weight of gunpowder. There is no smoke from the explosion of gun cotton; it does not foul the gun, nor heat it to the injurious degree of gunpowder. There is much smaller recoil of the gun. The same initial velocity of projectile is produced, with a shorter length of barrel. In projectiles of the nature of explosive shells it breaks the shell more equally into much more numerous pieces than gunpowder. When used in shells, one-third the weight of gun cotton produces double the explosive force of gunpowder.

**FOR CIVIL ENGINEERING AND MINING.**—In driving tunnels through hard rock a charge of gun cotton of given size exerts double the explosive force of gunpowder, thus a smaller number of holes is necessary. It may be so used as, in its explosion, to reduce the rock to much smaller pieces than gunpowder, and so facilitate its removal. As gun cotton produces no smoke, the work can proceed much more rapidly, and with less injury to the health of the miners. In working coal mines the advantages of bringing down much larger quantities of material with a given charge, and the absence of smoke in the explosion, enable a much greater quantity of work to be done in a given time at a given cost. The weight of gun cotton required to produce a given effect in mining is only one-sixth part of the weight of gunpowder. In blasting rock under water the wider range and greater force of a given charge is a great element in cheapening the cost of submarine work. The peculiar local action of gun cotton, to which the effects of gunpowder show no analogy, enables the engineer to destroy and remove submarine stones and rocks, without the preliminary delay and expense of boring chambers for the charge.

**FOR MILITARY ENGINEERING.**—The facility of transport is increased, the weight of gun cotton being one-sixth that of gunpowder. The peculiar local action of gun cotton facilitates the destruction of bridges and palisades, and every obstacle. For submarine explosion, gun cotton has the advantage of a much wider range of destructive power than gunpowder. For the same purpose gun cotton, from its lightness, has the advantage of keeping afloat the water-tight case in which it is contained, while gunpowder sinks it to the bottom.

**FOR NAVAL WARFARE.**—In the batteries of ships, between decks, and in casemated forts, the absence of smoke facilitates continuous firing. The absence of fouling and of heating are equally advantageous for naval as for military artillery.

**GENERAL ADVANTAGES.**—Time, damp, and exposure do not alter the qualities of the patent gun cotton. It has already been preserved 10 years without injury or decay. It can be transported through fire without danger, simply by being wetted, and when dried in the open air it becomes as good as before. In the case of a ship, or a fortress, or a city being on fire, this quality may be of the greatest value. It is much safer than gunpowder, owing to its being manufactured in the shape of rope or yarn. It cannot escape from its package, or be spilled by accident. The patent gun cotton is entirely free from the danger of spontaneous combustion, and secures that degree of safety and certainty which, at the time of the original invention, the gun cotton of Schölenberg did not possess.

Messrs. THOMAS PRENTICE and Co. are now in a position to contract with the owners of mines, engineers, contractors, and governments for gun cotton prepared in the various forms required for their use. Mining charges will be supplied in the rope form, according to the diameters of bore required, and gun cotton match-line, as well as instructions for using it in mines, will be supplied with it.

The great advantage of gun cotton make its use in practice very much cheaper than its comparative price would appear to show; in blasting rock, for example, the rapidity and quantity of the work done, with a given expense of wages, &c., is largely in favour of gun cotton.

Messrs. THOMAS PRENTICE and Co. are also prepared to manufacture the gun cotton, and deliver it in the form of gun cartridges, adapted to every description of ammunition; all they require for this purpose being a drawing of the gun, gunpowder cartridges, and ammunition, with the specification of weights, sizes, and initial velocities.

Artillerists who prefer to manufacture their own cartridges may make special arrangements with the patentees through Messrs. PRENTICE and Co.

Stowmarket, March 10 1864.

## STATISTICS OF THE MINES OF CORNWALL AND DEVON, WITH OBSERVATIONS UPON THEM.

I beg to inform the mining interest that my work, under the above title, for 1865, will be published early in the ensuing month, and will contain the following particulars, viz.: The geological position, present prospects, names of purser, manager, and secretary, with statement of the annual returns of each mine during the last ten years, and of total dividends paid to the present time.

The work will be illustrated by a Map of Cornwall and Devonshire; Geological District Maps, divided into eight sections, in which will be shown the boundary lines of each parish, height of hills, sources of rivers, &c.; Maps of the St. Just, St. Ives, Marazion, Helston, Gwinnar, Chiverton, Bodmin, Liskeard, Devon Great Consols, Ashburton, and Exmouth mining districts, showing boundary lines of each property, with the lodes, &c., traversing them. It will also contain Transverse and Longitudinal Sections of Dolcoath Mine (kindly supplied by Capt. Charles Thomas); Section of the Workings in Botallack Mine (supplied by the manager, S. H. James, Esq.); Geological Map of the Poyou Consols District (supplied by Major Davis, R.M.); Historical Account of the Devon Great Consols (supplied by the secretary, A. Allen, Esq.); and of all the principal mines in the two counties.

Subscribers' names will be received at my office, 224 and 225, Gresham House, Old Broad-street, London, E.C.

To Mr. Thomas Spargo, Gresham House, London, E.C.

Sir,—I will thank you to add my name to the list of subscribers to your work upon the Mines of Cornwall and Devon. I enclose you 5s. in payment of my subscription.

Name..... Address.....

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the NORTH WHEAL SETON COPPER MINING COMPANY (LIMITED).**—The Registrar of this Court has appointed the 30th day of December inst., at Eleven o'clock in the forenoon, at the Registrar's Office, at Truro, to SETTLE the LIST of CONTRIBUTORIES of the ABOVE-NAMED COMPANY, now made out and deposited at the said office.

WILLIAM MICHELL, Registrar of the said Court.

Dated this 12th day of December, 1864.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and in the MATTER of the EAST BOTALLACK CONSOLIDATED MINING COMPANY (LIMITED).**—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 7th day of Dec. inst., presented to the Vice-Warden of the Stannaries by John Haddon, a creditor of the said company, and that the said petition is directed to be heard before the Vice-Warden, at 79, Grosvenor-street, Grosvenor-square, London, on Wednesday, the 28th day of Dec. inst., at Eleven o'clock in the forenoon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitor, or agent, of his intention to do so, such notice to be forthwith forwarded to F. P. Smith, Esq., secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioner or his solicitor, within 24 hours after requiring the same, on payment of the regulated charge.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 24th day of December instant, and notice thereof must at the same time be given to the petitioner, his solicitor, or agent.

HENRY SEWELL STOKES, Solicitor, Truro (Agent for A. Fulbrook, 31, Treadneedle-street, London, Solicitor for the Petitioner).

Dated Truro, December 13, 1864.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the WEST PROVIDENCE MINING COMPANY.**—By direction of his Honour the Vice-Warden, notice is hereby given, that, on the 10th day of January next, at Eleven o'clock in the forenoon, at the Registrar's Office, at Truro, in the county of Cornwall, this Court will PROCEED to MAKE a CALL of ONE POUND TWELVE SHILLINGS PER SHARE on all the contributories settled on the list of contributories of the above-named company, under Class A.

All persons interested therein are entitled to attend at the time and place aforesaid, to offer objections to such call.

WILLIAM MICHELL, Registrar.

Dated Truro, December 15, 1864.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the NORTH WHEAL VOR MINING COMPANY.**—ALL CREDITORS or CLAIMANTS of the ABOVE-NAMED COMPANY, who have not received notice from the Registrar of the said Court that their claims have been already admitted, are hereby REQUIRED to COME IN and PROVE THEIR SEVERAL DEBTS or CLAIMS, at the Registrar's Office, Truro, on Tuesday, the 3d day of January, 1865, or in default thereof they will be excluded from the benefit of any distribution made before such proof.

And for the purpose of such proof they are either to attend in person, or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons) they are to send affidavits of their several debts or claims to the Registrar of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court, or before any Court, Judge, Justice, or any Commissioner of one of the Superior Courts lawfully authorized to take and receive affidavits and affirmations.

WILLIAM MICHELL, Registrar of the above-named Court.

Dated Truro, December 15, 1864.

BY DIRECTION OF THE TRUSTEES UNDER A MARRIAGE SETTLEMENT.

FIRST-CLASS INVESTMENT IN THE SUN FIRE OFFICE.

**MESSRS. GREEN AND SON (of St. Michael's House, St. Michael's-alley, Cornhill)** are favoured with instructions to SELL BY AUCTION, at Garraway's, Change-alley, Cornhill, on Thursday, Jan. 12, 1865, at Twelve for One, in Nine Lots, THIRTY SHARES in that well-known, old-established, and highly-flourishing concern, the SUN FIRE OFFICE. The dividend is £6 10s. per share, payable in January and July, independently of large bonuses. The dividends and bonuses averaged for 12 years to Midsummer, 1864, £11 9s. 2d. per annum per share, without any deductions for income-tax. The bonuses have generally been declared biennially or oftener; the last bonus of £6 10s. per share was paid at Midsummer, 1864, and the preceding bonus of £10 per share was paid at Midsummer, 1863.

Printed particulars, with conditions of sale, may be had at Garraway's; of Messrs. RANBY, FORD, LONGBOURNE, and LONGBOURNE, solicitors, 4, South-square, Gray's Inn; and of Messrs. GREEN and Son, auctioneers and estate agents, St. Michael's House, St. Michael's-alley, Cornhill.

**SOUTH BULVER MINE, IN THE PARISH OF GWENNAP, NEAR REDRUTH, CORNWALL.**—A PUBLIC AUCTION will be held on the mine, on Tuesday, the 20th day of December, at noon (say Twelve o'clock) for selling, in One Lot, the MINE, MACHINERY, and MATERIALS, viz.:

An excellent 36 in. cylinder ENGINE, with 10 ton BOILER; about 100 fms. of pit-work, varying from 11 to 6 in. pumps; 100 fms. of flat-roads, balance-bobs, main rods, pump rods, nearly new capstan rope, two capstans and shears, together with all the materials on the mine.

For further particulars, apply to Mr. RICHARDS, Bank House, Redruth, Cornwall.

Dated December 2, 1862.

**WHEAL ANNA, ST. HILARY, NEAR MARAZION, CORNWALL.**

**FOR SALE, BY PRIVATE CONTRACT, the WHEAL ANNA MINE,** with the MATERIALS thereon, situated in the parish of St. Hilary, near Marazion, Cornwall, adjoining the Great Wheal Prosper Mines.

The materials consist of a 70 in. cylinder PUMPING ENGINE, with THREE BOILERS complete.

36 in. cylinder PUMPING ENGINE, with ONE BOILER.

32 in. DOUBLE STAMPING ENGINE, 9 ft. stroke, with ONE BOILER, and 36 heads of stamps.

22 in. WINDING ENGINE, with BOILER and cage.

Capstans, shears, balance-bobs, capstan rope, a large number of 17 in., 16 in., and 12 in. pumps, with windbobs, doorkpieces, H. pieces, plunger poles, working barrels, rods, rod plates, caps, shaft roller, rod and flange bolts, rail iron, chain, ladders, whims, &c.; Brenton's calciner, with tin frames, trunks, buggies, &c.; smiths' and miners' tools, &c.

To view the same, apply to the agents, on the mine; and for further particulars to Mr. J. P. BENNETT, Falmouth; or to Messrs. JOHN TAYLOR and Sons, 6, Queen-street-place, Upper Thames-street, London.—Nov. 1, 1864.

**TO COLLIERY PROPRIETORS.—TO BE SOLD, BY PRIVATE CONTRACT, ONE 25 in. cylinder CONDENSING BEAM ENGINE, 5 ft. stroke, with fly-wheel 14 ft. diameter, Jack head and feed pump 6 ft. diameter, winding drum for 2 pump crans for 5 ft. stroke, with TWO wrought-iron CYLINDRICAL BOILERS 24 ft. long, 6 ft. diameter, with steam pipes and fittings; the above in good order, and suitable for pumping and winding. Also, ONE DIRECT ACTING PUMPING ENGINE, 45 in. cylinder, 9 ft. stroke, with metallic piston, double acting valves and connections; ONE wrought-iron CYLINDRICAL BOILER, 29 ft. long, 6 ft. diameter, in excellent working order.—To view and treat for the same, apply to Mr. HALES, Broncoed Colliery, Mold, Flintshire.**

**COAL BEDS.—TO BE LET, ON LEASE, for 21 years, from the 25th March, 1865, the very EXTENSIVE and VALUABLE COLLIERIES, called the SHEFFIELD COLLIERIES, within the parishes of Sheffield and Handsworth, in the county of YORK.**

The Silestone and the Park Gate beds of coal have been worked at these collieries by the Sheffield Coal Company, whose lease will expire on the 25th day of March, 1865.

There is yet unworked the parish of Sheffield—

Of the Silestone Bed, about ..... 800 acres, 6 ft. thick.

Of the Park Gate Bed, about ..... 400 acres, 5 ft. 3 in. thick.

And in the parish of Handsworth—

Of the Silestone Bed, about ..... 300 acres, 6 ft. thick.

Of the Park Gate Bed, about ..... 200 acres, 5 ft. thick.

The beds in the parish of Sheffield are under the lands of the Duke of Norfolk.

The beds in the parish of Handsworth are under lands not the property of his Grace.

In each case the coal field is quite entire.

The Trustees of the Duke of Norfolk are now engaged in sinking two shafts, which will win the whole of the beds in the parish of Sheffield.

Railways will be constructed from the new winning to depots near the town.

Lessees will have an option of repaying the Trustees the cost of the new winning and other works, or to pay rent on the outlay to be incurred.

The Works Vale branch of the Manchester, Sheffield, and Lincolnshire Railway was constructed by that company a few years ago into the coal field in the parish of Handsworth, now proposed to be let.

The Silestone bed of coal, London and in the provincial towns, is classed amongst the best house fire coal, and the Park Gate bed is used very extensively for trade purposes, and likewise for domestic use. Coke from these coals is made in great quantities.

The increasing trade of the town and neighbourhood of Sheffield, and the nearness of the collieries to that town, the facilities afforded by the Manchester, Sheffield, and Lincolnshire, the Great Northern, and the Midland Railways, and the fact of the coal fields being entire, and wholly the property of the Duke of Norfolk, give to these collieries advantages which few possess.

For further particulars, apply to Messrs. T. E. FORSTER and Co., Newcastle-upon-Tyne; Mr. Maurice SARRIS, at the Norfolk Estate Office, Sheffield; or to Messrs. Faw and Co., solicitors, Covent Garden, London.

**VERY VALUABLE COAL FIELD, IN THE COUNTY OF DURHAM.**

**THE LATE WM. HARRY DUKE OF CLEVELAND'S HARTE ESTATE ACTS HUTTON HENRY ESTATE.—TO BE LET, ON LEASE,** all the VALUABLE SEAMS of COAL UNDER this ESTATE, situated in the parish of MONK HESLOND, in the immediate vicinity of Wingate Grange and Castle Eden Collieries, the former producing the "Caradoc" and "Howden Wall's-End" coals of the London market, and the latter the "Hartlepool West Hartley."

The estate comprises 732 acres, and contains workable seams of the aggregate thickness of 14 ft., well adapted for household, steam, and coking purposes.

The Hartlepool branch of the North-Eastern Railway passes through the property, the distance to the Hartlepool Docks being seven miles; the haulage and wagons are provided by the railway company, at moderate dues. The port and docks have ample accommodation for vessels of the largest size. The Hartlepool branch also connects this coal field with the North-Eastern main line, at Ferry Hill.

For further particulars, apply to Messrs. WHARTON and FORDS, solicitors, 8, Lincoln's Inn-fields, London; Messrs. TENNANT, NEWBOLD, and WILSON, solicitors, Leeds; T. E. FORSTER, Esq., Ellison-place, Newcastle-upon-Tyne; or Mr. G. W. ALLANSON, of Hartlepool, resident agent; any of whom will furnish the necessary information.

**SLATE QUARRY.—TO BE DISPOSED OF,** a most VALUABLE SLATE PROPERTY in CARNARVONSHIRE, from which a princely fortune may easily be derived, and which, from its peculiar natural facilities, may be worked most extensively for a comparatively small outlay, and in a much shorter period of time than any other quarry of its extent in North Wales, the slate being good almost to surface.—Address, "W. G.," Mount Pleasant, Llanberis, Carnarvonshire.

**MERIONETHSHIRE, NORTH WALES.**

**TO BE DISPOSED OF, a SLATE QUARRY PROPERTY,** vein proved, and position commanding all advantages. Also, a VALUABLE GRANT, possessing a RICH SILVER-LEAD MINE, with other lodes, very favourable.—To treat for the same, apply to Mr. H. P. M. OWEN, C.E., Penrhynendendath, via Carnarvon.

Mr. OWEN has OTHER MINES and QUARRIES TO DISPOSE OF. Also, begs to offer his services to gentlemen in all inspections of native mineral, with practical reports thereon. Immediate attention given.

**INVERNESS-SHIRE.**

**SLATE QUARRY TO BE LET,** with entry at Cledmains next, in the slate district of NORTH BALLAHULLISH, on LOCH LEVEN, in the parish of KILMALLIE, and county of INVERNESS. This slate is similar to the well-known Ballahullish, on the south shore of the loch. A quarry has been partially opened and the slate worked, and several houses have been roofed with it on the estate. Mr. THOMAS FORBES, residing at Achmarry, by Fort William, will show the district proposed to be let, and the quarry; and offers from parties of capital and experience in opening and working such quarries will be received by the proprietor, DONALD CAMERON, Esq., of Lochiel, Fort William, who will supply such further information as may be desired.

**FOR SALE, the RIGHT to the PATENT of a VALUABLE IMPROVEMENT IN VALVES and BUCKETS for PUMPS, and in VALVES or COCKS for OTHER USES.**—For particulars, apply to Mr. W. T. RAWLIE, patent and mining agent, 39, Budge-street, Bristol.

**HORIZONTAL ENGINES FOR SALE,** at very low prices.—One 12 in. cylinder, 24 in. stroke; one 12 in. cylinder, 36 in. stroke; and two 14 in. cylinders 24 in. stroke. All ready for delivery, and may be had with or without fly-wheels.—Apply to Messrs. E. PAGE and Co., Laurence Pountney-place Laurence Pountney-hill Cannon-street E.C.

**NICHOLLS, WILLIAMS, AND CO., ENGINEERS,** BEDFORD IRONWORKS, TAVISTOCK.

**MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION,** made on the BEST and NEWEST PRINCIPLES. We beg most especially to call the attention of the public to the manufacture of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS OF EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and HEAVY SHAFTS OF ANY SIZE. CHAINS made of the best iron, and warranted. RAILWAY WORK OF EVERY DESCRIPTION.

**ALL ORDERS FOR ABROAD RECEIVE THEIR BEST ATTENTION.** NICHOLLS, WILLIAMS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.

Messrs. NICHOLLS, WILLIAMS, and Co. have always a LARGE STOCK of SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

**PATENT FLEXIBLE TUBING,** AND BRATICE CLOTH FOR MINES.

MANUFACTURED BY **ELLIS LEVER,** PATENTEE.

**WEST GORTON WORKS, MANCHESTER.**

**TAVISTOCK IRONWORKS AND STEEL ORDNANCE COMPANY (LIMITED).**

(LATE GILL AND CO.) ENGINEERS, IRON AND BRASS FOUNDERS, MANUFACTURERS OF

STEAM ENGINES, BOILERS, AND MACHINERY OF ALL KINDS. CHAINS, SHOVELS, EDGE TOOLS, AND EVERY DESCRIPTION OF CAST AND HAMMERED IRON FOR MINING, MANUFACTURING, RAILWAY, OR AGRICULTURAL PURPOSES.



**CLAYTON, SHUTTLEWORTH, AND CO.,**  
ENGINEERS,  
MANUFACTURERS OF PORTABLE AND FIXED STEAM ENGINES, MACHINERY FOR PUMPING, HOISTING, GRINDING, SAWING, &c., ENGINES FOR STEAM CULTIVATION, SELF MOVING ENGINES FOR COMMON ROADS AND AGRICULTURAL PURPOSES GENERALLY.  
STAMP END WORKS, LINCOLN; and  
78, LOMBARD STREET, LONDON.  
ALSO AT  
LOWENGASSE No. 44, LANDSTRASSE, VIENNA, and GEGENUBER DEM BAHNHOF, PESTH.  
Descriptive, illustrated, and priced catalogues free per post.  
SPECIAL DRAWINGS WHEN REQUIRED.  
THE BEST STEAM THRASHING MACHINERY MADE.

Swan Rope Works.

**GARNOCK, BIBBY, AND CO.,**  
CHAPEL STREET, LIVERPOOL,  
MANUFACTURERS OF FLAT AND ROUND HEMP AND IRON AND STEEL WIRE ROPES FOR MINING, RAILWAY, AND SHIPPING PURPOSES.  
MANILLA ROPE OF SUPERIOR QUALITY, FIFTY PER CENT. STRONGER, AND THIRTY PER CENT. CHEAPER than Russian hemp rope.  
WIRE ROPE OF FIRST QUALITY WIRE, and the HIGHEST STANDARD OF STRENGTH.

First Class Silver Medal, Royal Polytechnic Society, Falmouth, 1864.

**CREASE'S PNEUMATIC TUNNELLING ENGINE,**  
for SUPERSEDING the SLOW and EXPENSIVE USE of MANUAL LABOUR in SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to drive through any rock of average hardness at a minimum rate of 1 fm. per diem, and to sink shafts at the rate of 2 fms. in three days.  
Mr. CREASE will undertake contracts for sinking shafts, driving levels, &c., at an enormous reduction of time and great saving in cost.  
Applications to be addressed (for the present) to the patentee, Mr. E. S. CREASE, Tavistock, Devon.

Prize Medal—International Exhibition, 1862.

**LENOIR'S PATENT GAS POWER ENGINE.**—  
The company are now publicly exhibiting this motive power daily, between the hours of Eleven and One, and Three and Five.  
C. W. WOOD, Manager and Sec. (pro tem).  
No. 40, Cranbourn-street, Leicester-square.

Prize Medal Awarded Great Exhibition, 1851, and International Exhibition, 1862.

**PATENT SAFETY FUZE WORKS, TUCKINGMILL, CORNWALL.**—We beg respectfully to inform the public that since the decease of the late Mr. THOMAS DAVEY this firm has consisted of JOHN SOLOMON BICKFORD, GEORGE SMITH, FRANCIS PRYOR, SIMON DAVEY, and WILLIAM BICKFORD SMITH. It is requested that all letters may be addressed, and all cheques and drafts made payable to us, as  
BICKFORD, SMITH, AND CO.

TO CIVIL ENGINEERS, RAILWAY CONTRACTORS, MINE AGENTS, QUARRY PROPRIETORS, EXCAVATORS, AND OTHERS.

**PATENT SAFETY BLASTING POWDER COMPANY (LIMITED).**

MANUFACTORY.—SOUTH DOW, NEAR DEVONPORT.  
The company is PREPARED TO EXECUTE ORDERS for this POWDER to ANY EXTENT. The chief recommendations of this valuable invention consist in—  
1.—ITS SAFETY.  
2.—THE SMALL AMOUNT OF SMOKE, and COMPARATIVE FREEDOM FROM NOXIOUS GASES AFTER DISCHARGE.  
3.—ITS CHEAPNESS.

1.—The Patent Safety Blasting Powder being Non-Explosive, unless confined by tamping in a hole, none of the fearful and fatal accidents arising from all other kinds of powder employed for blasting can possibly attend its use, nor can explosion take place while the powder is deposited in store, or during transit, or in the operation of boring out the charge from holes which may misfire from defective fuse.  
2.—In consequence of the small quantity of smoke produced by the blast, and the almost total absence of noxious gases, the men employed are enabled to resume their work without loss of time or injury to their health.  
3. CHEAPNESS.—The Patent Safety Blasting Powder is cheaper and stronger than ordinary powder, the evidence of those who have adopted its use proving that a SAVING is thereby EFFECTED of from TWENTY-FIVE to THIRTY PER CENT.

The company are also executing numerous orders, both for the home market and for foreign countries, of the Patent Safety Blasting Powder, made up into waterproof cart-ridges. These are especially adapted for wet ground, for holes difficult to charge, and for all work where dispatch is of consequence.  
Copies of testimonials, and any further information connected with the powder, may be obtained from Mr. CHARLES DAVEY, general agent, Devonport; or from the Secretary, at the manufactory.—Dated South Down, September 19, 1864.

**THE UNITY PATENT SAFETY FUZE COMPANY**  
SCORRIER, CORNWALL, SOLICIT ORDERS for the DIFFERENT KINDS of SAFETY FUZE which they are PREPARED to SUPPLY, of SUPERIOR QUALITY, and of ANY LENGTH.

**CHARLES DAVEY AND CO.,**  
SAFETY FUZE MANUFACTURERS,  
ST. HELEN'S JUNCTION, LANCASHIRE.

TO IRON AND COAL MASTERS, MINING AND QUARRY COMPANIES, &c.—  
IMPROVED BLACK VARNISH,  
FOR PREVENTING IRON FROM RUST, AND WOOD FROM DECAY.

**BRILLIANT JET BLACK, SUPERIOR TO PAINT** in APPEARANCE, dries in less time, contains preservative qualities of the best description, and is economical in its use; one gallon, at 1s., is equal to 14 lbs. of paint, which costs 4s. For COLLIERY HEAD GEARING, RAILWAY WAGONS, BOILERS, CASTINGS, CANAL BOATS, &c., it is especially adapted. In casks containing 10, 15, and 20 cwts. each. In quantities of 1 ton and upwards, price £11 per ton.

**TURPENTINE SUBSTITUTE.**  
GLOVER and Co. have now on hand a really splendid painting sample of spirits of turpentine substitute, a pure crystal, not more volatile than the genuine American turpentine, and quite inoffensive to smell. Price, 2s. per gallon, in 39-gallon casks.

**PETROLEUM.**  
This oil gives a pure, white, soft, and brilliant light, easily regulated, and portable. For works or public buildings, where gas is not desirable, the brilliancy and economy of the article are unequalled.

**WASTE NO OIL.**  
STRONG IRON OIL CISTERNS.  
Not liable to leak, and which economise space in the stores. From 600 gallons, 48 diameter by 84 in height, price £10 10s., down to 10 gallons, 15 diameter by 21 in height, price 12s., WITH EVERY VARIETY OF SIZE AND PRICE BETWEEN.

**STRONG IRON BUCKETS:**—  
2½ galls. .... 4s. 6d. | 3 galls. .... 5s. 6d. | 3½ galls. .... 5s. 6d. | 4 galls. .... 6s. 0d.  
**WAGON GREASE.**

**GLOVER AND CO.,** No. 40, MANESTY LANE, LIVERPOOL.

**BASTIER'S PATENT CHAIN PUMP,**  
APPARATUS FOR RAISING WATER ECONOMICALLY, ESPECIALLY APPLICABLE TO ALL KINDS OF MINES, DRAINAGE, WELLS, MARINE, FIRE, &c.

J. U. BASTIER begs to call the attention of proprietors of mines, engineers, architects, armers, and the public in general, to his new pump, the cheapest and most efficient ever introduced to public notice. The principle of this new pump is simple and effective, and its action is so arranged that accidental breakage is impossible. It occupies less space than any other kind of pump in use, does not interfere with the working of the shafts, and unites lightness with a degree of durability almost imperishable. By means of this hydraulic machine water can be raised economically from wells of any depth; it can be worked either by steam-engine or any other motive power, by quick or slow motion. The following statement presents some of the results obtained by this hydraulic machine, as daily demonstrated by use:—

1.—It utilizes from 90 to 92 per cent. of motive power.  
2.—Its price and expense of installation is 75 per cent. less than the usual pumps employed for mining purposes.  
3.—It occupies a very small space.  
4.—It raises water from any depth with the same facility and economy.  
5.—It raises with the water, and without the slightest injury to the apparatus, sand, mud, wood, stone, and every object of a smaller diameter than its tube.  
6.—It is easily removed, and requires no cleaning or attention.

BASTIER'S PATENT CHAIN-PUMP may be seen daily in operation at Messrs. SAMUEL BERGER and Co.'s Patent Rice Starch Works, Bromley-by-Bow, London, E. Cards of admission to be had on application to the inventor and patentee, Mr. J. U. BASTIER, C.E., 12, GOWER STREET NORTH, LONDON.

J. U. BASTIER, sole manufacturer, will CONTRACT TO ERECT his PATENT PUMP at HIS OWN EXPENSE, and will GUARANTEE IT FOR ONE YEAR, or will GRANT LICENSES to manufacturers, mining proprietors, and others, for the USE of his INVENTION.  
OFFICES, 12, GOWER STREET NORTH, LONDON.  
London, March 21, 1865. Hours from Ten till Four. J. U. BASTIER C.E.

**THE BANKING, MINING, AND JOINT-STOCK COMPANIES REVIEW,**  
A JOURNAL OF COMMERCE, TRADE AND MANUFACTURE,  
SCIENCE AND THE ARTS.

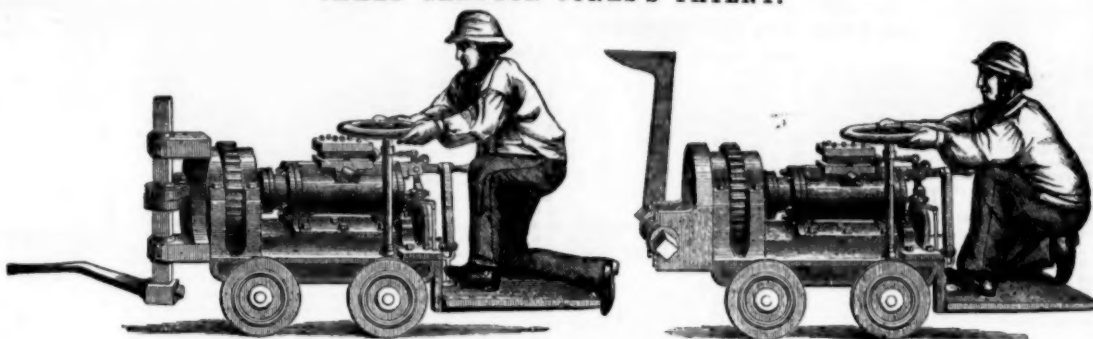
Published every Wednesday. Subscription, £1 ls. annually. Price 6d. stamped.

**RAILWAYS AND MINES.**

Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the *bona fide* merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probabilities of alliance or competition with neighbouring companies, the creation of new shares, the state of the money market as affecting the renewal of debentures, and other considerations founded on data to which those only have access who give special attention to the subject. Mines afford a wider range for profit than any other public securities. The best are free from debt, have large reserves, and pay dividends bi-monthly varying from £15 to £25 per cent. per annum. Instances frequently occur of young mines rising in value 400 or 500 per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to railways and mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment; we will, therefore, forward, upon receipt of Post-office order for 6s., the names of six dividend and six progressive companies that will, in our opinion, well repay capitalists for money employed.  
Messrs. TREDNICK AND CO., STOCK AND SHAREBROKERS, and DEALERS IN BRITISH MINING SHARES, 78, LOMBARD STREET, E.C.

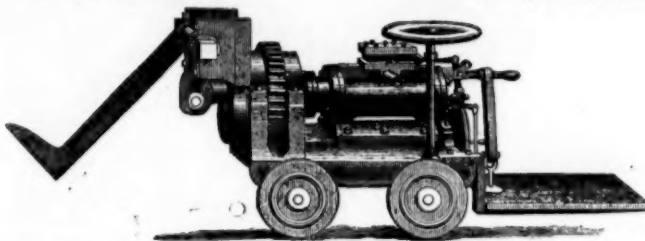
## COAL CUTTING MACHINERY.

JAMES GRAFTON JONES'S PATENT.



Pick in position for holeing.

Pick in position for vertical cut downwards.



Pick in position for vertical cut upwards.

Messrs. JONES and LEVICK, proprietors of this patent, are prepared to supply these Machines, which are on an improved principle, and are constructed to work the coal at any angle from the horizontal to the vertical, thus rendering them capable of "holeing" at any angle, and of driving "headings." They are simple and substantial in construction, and are not likely to get out of order. They are already successfully employed in the Barnsley coal district, and are being introduced into the South Wales and other coal mining districts. They are also suitable for mining the argillaceous ironstones of the coal measures, as well as working other mines and quarries.

N.B.—Air Compressing Machinery will be supplied, or plans and specifications furnished.

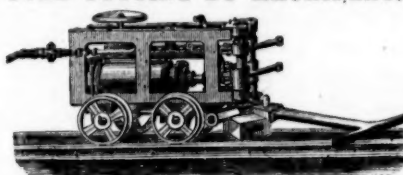
Applications to be made to Messrs. FREDERICK LEVICK and Co., 4, Charlotte-row, Mansion House, London; or Messrs. LEVICK and SIMPSON, Blairston Ironworks, near Newport, Monmouthshire.

## COAL CUTTING MACHINERY.

The WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY TO MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES. The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE. All communications to be made to Messrs. FIRTH, DONISTHORPE, and BOWER, No. 8, Britannia-street, Leeds.

NOTICE.—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

## COAL CUTTING BY MACHINERY.



MESSRS. RIDLEY AND CO. have, by recently PATENTED IMPROVEMENTS, COMPLETED their TRUNK COAL CUTTING MACHINE, WORKED BY COMPRESSED AIR, and are NOW PREPARED TO NEGOCIATE for the USE, and to SUPPLY MACHINES, which will be found to COMBINE SIMPLICITY of CONSTRUCTION with PORTABILITY and ECONOMY in WORKING. By the use of these machines a CONSIDERABLE SAVING of COAL is EFFECTED, and the COST of LABOUR MUCH REDUCED. Each machine will be guaranteed as to its capabilities, &c.  
All applications to be made to Messrs. RIDLEY and Co., No. 11, South-street, Finsbury London, E.C.; or Mr. PERCY BARKER, agent, 9, Clement's-lane, E.C.

\* \* \* COLLIERY PROPRIETORS are CAUTIONED against PURCHASING or USING MACHINES, the construction of which will constitute an INFRINGEMENT of the ABOVE PATENT.

MESSRS. KNOWLES AND BUXTON, CHESTERFIELD, MANUFACTURERS OF PATENT TUBULAR TUYERES.



The PATENT TUBULAR TUYERE possesses GREAT ADVANTAGES over the ORDINARY TUYERES, both for its DURABILITY and EASY WORKING. A current of cold water going direct to the nozzle prevents their destruction, however much they may be exposed to the fire.  
We repair them at half the first cost, making them equal in size to new ones, all parties returning them carriage paid.

No. 1 tuyere, 16 in. long	28s. each.
No. 2 " 18 "	32s. "
No. 3 " 20 "	36s. "
No. 4 " 22 "	40s. "
No. 5 " 24 "	44s. "

Delivered at Chesterfield station. Terms, nett cash quarterly.

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HYDRAULIC AND GENERAL ENGINEERS,

MANUFACTURERS OF PUMPS OF EVERY DESCRIPTION FOR HAND,

HORSE, STEAM, OR WATER POWER.

**BORING TOOLS.**

BORING TOOLS OF ALL DESCRIPTIONS, for

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PORTABLE, SINGLE, and DOUBLE BARREL, and

other PUMPS, and PORTABLE STEAM

ENGINES.

CRABS, CRANES, PULLEY BLOCKS, and

HOISTING TACKLE.

ANY OF THE ABOVE CAN BE HAD ON HIRE

OR PURCHASE.

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International Exhibition, 1862—Prize Medal.



**JAMES RUSSELL AND SONS**  
(the original patentees and first makers of wrought-iron tubes), of the CROWN PATENT TUBE WORKS, WEDNESBURY, STAFFORDSHIRE, have been AWARDED A PRIZE MEDAL for the "good work" displayed in their wrought-iron tubes and fittings.  
Warehouse, 81, Upper Ground-street, London, S.

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MANUFACTURERS OF

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TURNING TOOLS, CHISELS, &c.

CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT and CRANK AXLES, SHAFTS and

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SHEAF WORKS AND SPRING WORKS, SHEFFIELD.

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where the largest stock in the world may be selected from.

**FRANCIS'S SLACK WASHING MACHINE.**

SIMPLE, and THOROUGHLY EFFICIENT, REQUIRES NO STEAM ENGINE. Will wash brass from the puddling-furnace. Price £25.—Apply to Mr. R. C. RAWLINS, Wynn Hall Colliery, Rulon.

**BLAKE'S PATENT STONE BREAKER,**

OR ORE CRUSHING MACHINE,

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England.

The above section illustrates Blake's Stone Breaker, just as made the last five years, and is fully protected in every part by patents.

Extract from Specification:—A short but powerful vibration is imparted to one or both of the jaws by any convenient arrangement, and combination of powerful levers, worked by a crank or eccentric on the main shaft.

LEGAL PROCEEDINGS will be taken at once against any person or persons found making, using, or vending any machine, the construction of which will constitute an infringement on the above patent. Head extracts of testimonials:—

*Aldat Works, near Wednesbury.*—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.

*Welsh Gold Mining Company, Dolgelly.*—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard winstone in 20 minutes, for fine road metal, free from dust. Messrs. OUD and MADDISON.

*Kirkcaldy Hall, near Wigan.*—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton. JOHN LANCASTER.

*Oreoca, Ireland.*—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. WM. G. ROBERTS.

*General Frémont's Mines, California.*—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS.

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**DR. WATSON, F.R.S.** (of the Lock Hospital, and College of

Physicians and Surgeons) on the Self Cure of Nervous and Physical Debility,

Spermatorrhoea, Decline of Manly Vigour, and Diseases of Indiscretion, with Means for

Perfect Restoration, free for six stamps, by Dr. WATSON, 1, South-crescent, Bedford-square, London. Consultation daily from Eleven till Two and Six till Eight. Sunday,

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**NEW MEDICAL GUIDE.**

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has published A GUIDE (138 pages) for Self-Cure. Sent to any address on receipt of

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## THE MINING SHARE LIST

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last paid.
1300	Alderley Edge (cop.), Cheshire [L.]	10 0 0	—	—	11 3 0	0 15 0—Oct. 1864
4000	Bedford United (copper), Tavistock	2 6 8	—	—	13 11 0	0 2 6—Oct. 1864
1340	Boscawen (tin), Cornwall [S.E.]	1 15 0	—	—	1 5 0	0 5 0—May 1864
300	Botalack (tin), Cornwall [S.E.]	91 5 0	—	—	47 15 0	0 3 0—May 1864
8000	Brothwood (lead), Cardigan [S.E.]	2 7 6	—	—	0 19 0	0 2 6—April 1864
916	Cargill (silver-lead), Newlyn	15 6 7	38	36 38	5 0 0	0 15 0—Nov. 1864
1000	Carn Brea (copper), Cornwall [S.E.]	15 0 0	—	—	280 10 0	0 2 0—June 1864
3000	Clifford Amalgamated (cop.), Gwent	30 0 0	23 1/2	31 32	32 15 0	0 10 0—Oct. 1864
12000	Copper Mines of England	25 0 0	—	—	7 1/2 per cent.	—Half-yrly.
40000	Ditto	100 0 0	—	—	1 per cent.	—Half-yrly.
867	Cwm Eridia (lead), Cardiganshire [L.]	1 10 0	—	—	15 15 0	0 15 0—Oct. 1864
125	Cwmystywlth (lead), Cardiganshire	60 0 0	—	—	27 10 0	0 4 0—Sept. 1864
280	Darwent Mines (tin), Durham	60 0 0	—	—	10 0 0	0 5 0—June 1864
1024	Devon Gt. Cons. (cop.), Tavistock [S.E.]	1 0 0	395	580 800	943 0 10	0 0—Nov. 1864
248	Dolcoath (copper), Cornwall [S.E.]	128 17 6	—	—	775 10 0	0 6 0—Oct. 1864
12800	Drake Walls (tin), Cornwall [S.E.]	2 1 0	—	—	0 18 0	0 1 6—May 1864
812	East Basset (cop.), Redruth [S.E.]	29 10 0	51	48 50	128 0 0	0 1 0—Nov. 1864
6144	East Caradon (copper), St. Austell [S.E.]	2 14 6	20	19 1/2 20 1/2	12 2 0	0 17 0—Oct. 1864
300	East Darnley (lead), Cardiganshire	32 0 0	—	—	101 10 0	0 2 0—Oct. 1864
125	East Pool (tin), Cornwall [S.E.]	24 5 0	—	—	369 10 0	0 4 0—June 1864
5000	East Rosewarne (cop.), Pool, Gwynn	2 5 0	—	—	0 2 0	0 2 0—May 1864
1908	East Wheal Lovell (tin), Wendron	2 13 6	16	14 1/2 15 1/2	1 10 0	0 10 0—May 1864
2800	Foxdale (lead), Isle of Man [L.]	25 0 0	—	—	64 0 0	0 1 0—June 1864
5000	Frank Mills (lead), Christow	3 18 6	5 1/2	5 1/2 5 1/2	14 6 0	0 5 0—Nov. 1864
12500	Great Laxey (lead), Isle of Man [L.]	4 0 0	20	19 20	1 10 0	0 10 0—Dec. 1864
1788	Great Wheal Fortune (tin), Breage	18 0 0	7	4 1/2 5	5 15 0	0 10 0—Nov. 1864
5008	Great Wh. Vor (tin), Helston [S.E.]	40 0 0	36 1/2	33 1/2 34 1/2	4 12 0	0 12 0—Sept. 1864
118	Great Work (tin), Helston [S.E.]	100 0 0	—	—	15 0 0	0 5 0—Aug. 1864
1024	Herodotus (id.), near Liskeard [S.E.]	8 10 0	—	—	29 15 0	0 1 0—Oct. 1864
400	Lisburne (lead), Cardiganshire, Wales	15 15 0	—	—	427 10 0	0 3 0—Oct. 1864
2000	Masey & Saff (lead), L.	20 0 0	—	—	1 0 0	0 1 0—Oct. 1864
9000	Marka Valley (copper), Cardigan	4 10 6	5 1/2	5 1/2 5 1/2	2 15 0	0 1 6—Oct. 1864
3000	Miners Boundary (lead), Wrexham [L.]	1 0 0	—	—	0 4 0	0 2 0—Nov. 1864
1800	Miners Mining Co. (L.) (id.), Wrexham	25 0 0	300	280 300	162 18 0	0 7 0—Nov. 1864
30000	Miners of Ireland (cop., lead, coal)	7 0 0	—	—	16 19 7	0 12 0—Jan. 1864
40000	Mynydd (iron ore), L. [S.E.]	2 18 0	—	—	0 4 0	0 2 0—April 1864
250	Nanty Mills (lead), Montgomery	30 0 0	—	—	7 0 0	0 1 0—June 1864
6000	New Birch Tor and Vitor Cons. (tin)	1 1 6	2 1/2	2 1/2 2 1/2	0 11 0	0 1 0—Oct. 1864
5936	North Trekerby (copper), St. Austell	1 9 0	2 1/2	—	0 13 0	0 2 6—Feb. 1864
4000	Par Consols (cop.), St. Austell [S.E.]	1 2 6	—	—	36 19 0	0 2 6—Mar. 1864
200	Parys Mines (copper), Anglesey [L.]	80 0 0	—	—	122 10 0	0 10 0—Oct. 1864
1772	Pollbrer (tin), St. Austell	15 0 0	—	—	7 19 6	0 10 0—Nov. 1864
812	Polbrer (tin), St. Austell	8 0 0	—	—	1 0 0	0 1 0—July 1864
1120	Providence (tin), Uney Lelant [S.E.]	10 6 7	37	35 36	75 0 0	0 1 0—Nov. 1864
6000	Rosewall Hill and Ransom United	2 18 0	—	—	0 10 0	0 1 6—June 1864
412	South Caradon (cop.), St. Austell [S.E.]	8 0 0	550	504 550	489 10 0	0 7 0—Nov. 1864
512	South Trekerby (copper), Redruth [S.E.]	18 19 0	25	20 25	370 15 0	0 1 0—Nov. 1864
498	S. Wh. Frances (cop.), Helston [S.E.]	18 19 0	25	20 25	0 8 0	0 5 0—Mar. 1864
6000	St. Day United (tin), Redruth	14 0 0	7	—	0 8 0	0 5 0—Mar. 1864
940	St. Ives Consols (tin), St. Ives	8 0 0	—	—	490 10 0	0 10 0—May 1864
8000	Tinctor (cop.), Pool, Gwynn [S.E.]	9 0 0	17	16 1/2 16 1/2	15 11 0	0 10 0—Sept. 1864
1600	Torbay Hematite Iron (L. [S.E.]	6 7 0	—	—	0 6 0	0 5 0—Nov. 1864
5000	West Basset (copper), Helston [S.E.]	1 10 0	—	—	25 18 0	0 5 0—Nov. 1864
8000	W. Chiverton (id.), Ferranabuloe [S.E.]	62 1/2	60 65	—	3 15 0	0 15 0—Nov. 1864
254	West Darnley (copper), Gwynn	80 10 0	—	—	43 10 0	0 4 0—Nov. 1864
400	W. Wh. Frances (cop.), Camborne [S.E.]	47 10 0	210	205 210	421 0 0	0 4 0—Dec. 1864
512	Wheal Basset (copper), Helston [S.E.]	2 6 100	95 100	—	604 10 0	0 10 0—Dec. 1864
1000	Wheal Basset and Grylls (tin)	7 0 0	11	—	3 0 0	0 10 0—Oct. 1864
512	Wheal Jane (silver-lead), Kea	3 10 0	—	—	15 0 0	0 10 0—Aug. 1864
4295	Wheal Kitty (tin), St. Austell	4 6 6	—	—	2 3 6	0 5 0—Nov. 1864
1024	Wheal Kitty (tin), Uney Lelant [S.E.]	2 0 0	—	—	10 2 6	0 7 6—July 1864
1024	Wh. Mary Ann (id.), Menheniot [S.E.]	8 0 0	14	13 14	59 7 6	0 10 0—Dec. 1864
100	Wheal Mary (tin), Lelant	7 0 0	—	—	268 5 0	0 4 0—Mar. 1864
80	Wheal Ovelton (tin), St. Austell	70 0 0	—	—	243 3 0	0 5 0—May 1864
994	Wheal Saron (tin), Cornwall	60 10 0	205	193 200	183 15 0	0 4 0—Oct. 1864
1040	Wh. Trevelyan (id.), Liskeard [S.E.]	5 17 0	18	18 1/2 19 1/2	60 17 0	0 12 0—Dec. 1864
9044	Wheal Tremayne (tin), Gwynn	6 11 3	—	—	6 1 3	0 5 0—Nov. 1864
7000	Wicklow (copper), L., Wicklow	2 10 0	—	—	14 17 0	0 6 0—Oct. 1864

\* Dividends paid every two months. † Dividends paid every three months.

## BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last paid.
340	Boscawen (tin), St. Austell [S.E.]	90 10 0	—	—	36 10 0	0 0—Mar. 1862
8000	Chiverton (lead), Ferranabuloe [S.E.]	6 0 0	6 1/2	—	85 0 0	0 2 0—June 1862
340	Condour (cop.), Cornwall	76 10 0	—	—	1 7 0	0 7 0—May 1862
2450	Cook's Kitchen (copper), Helston	18 5 9	11 1/2	10 1/2 11 1/2	2 7 6	—Sept. 1862
1024	Copier Hill (copper), Redruth	12 0 0	—	—	7 12 0	0 4 0—July 1862
1055	Cradock Moor (copper), St. Austell	8 0 0	—	—	0 10 0	0 2 6—Jan. 1863
4076	Devon and Cornwall (cop.), Tavistock	6 3 8	—	—	0 17 6	0 2 6—Jan. 1863
8000	Dyffryn (lead), Wales	12 6 8	—	—	41 9 0	0 2 6—June 1863
400	Fowey Consols (copper), Fowey	4 0 0	—	—	7 18 0	0 2 6—June 1863
8000	Great South Toile, Redruth	0 14 6	—	—	0 3 0	0 1 6—Mar. 1862
10240	Gannals (Clitters' Adit)	0 2 0	—	—	1091 0 0	0 5 0—May 1860
160	Levant (copper), St. Austell	2 10 0	—	—	18 1 0	0 7 6—Aug. 1862
640	Mount Pleasant (lead), Mold	4 0 0	—	—	0 10 0	0 8 0—Mar. 1862
8000	Orsadd (lead), Flintshire	0 8 8	—	—	0 5 0	0 5 0—Dec. 1862
8000	South Exmouth (lead), Christow	1 14 0	—	—	9 18 0	0 1 0—June 1862
380	Spears Moor (tin), Cornwall	32 17 0	—	—	7 0 0	0 10 0—Sept. 1860
872	Trevelyan Consols (tin), St. Austell	14 10 0	—	—	11 0 0	0 2 0—Mar. 1862
1000	Trumpet Consols (tin), near Helston	11 0 0	—	—	6 2 6	0 10 0—Mar. 1864
12000	Twelve Apostles Amal. (id.), Wrexham	1 0 0	—	—	8 15 0	0 1 0—Jan. 1861
4000	Vigra and Clogau (copper), L. [S.E.]	5 0 0	—	—	14 10 0	0 3 0—June 1861
1024	Wendron Consols (tin), Wendron	19 13 10	—	—	101 1 3	0 10 0—Oct. 1862
60	West Burton Gill (lead), Yorksh.	60 0 0	—	—	295 10 0	0 5 0—Feb. 1861
1024	Wheal Caradon (cop.), Liskeard [S.E.]	9 0 0	5 1/2	7 1/2	76 8 0	0 1 0—May 1863
1024	Wheal Friendship (copper), Devon	20 0 0	—	—	0 19 0	0 3 0—May 1863
886	Wheal Margaret (tin), Uney Lelant	11 7 6	9	8 9	—	—
30000	West Fowey Consols (tin and copper)	7 10 0	—	—	—	—

## FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last paid.
30000	Australian (cop.), S. Australia [S.E.]	7 7 6	—	—	0 10 0	0 10 0—Dec. 1863
2444	Burra Burra (cop.), S. Australia	5 0 0	—	—	320 0 0	0 10 0—Sept. 1863
6000	Central American (silver), L.	5 0 0	—	—	0 5 0	0 14 0—Dec. 1863
16000	Cape Copper Mining (L.) [S.E.]	7 0 0	11	10 11	0 15 0	0 5 0—Sept. 1864
19000	Cobro Copper Co. (cop.), Cuba [S.E.]	0 29	—	—	100 0 0	0 8 0—July 1864
100000	Don Pedro No. Del Rey [L.] [S.E.]	0 12 6	—	—	0 9 0	0 9 0—Dec. 1863
70000	English and Australian	8 0 0	—	—	1 12 0	0 2 0—Aug. 1864
18000	East Indian Coal, Calcutta [L.]	10 0 0	—	—	7 1/2 per cent.	—Yearly.
25000	Fortuna (lead), Spain [L.] [S.E.]	2 0 0	4 3 3 1/2	xd.	0 14 4	0 3 0—June 1864
8000	Gen. Mining Assoc., Nova Scotia [S.E.]	190 0 0	28	24 28	21 10 0	0 10 0—June 1864
88000	Kapunda Mining Co., Australia [S.E.]	1 0 0	1 1/2	3 1/2	0 12 0	0 5 0—Aug. 1864
16000	Lindars (id.), Pono Ancho, Spain [S.E.]	8 0 0	—	—	1 1 2	0 2 0—July 1864
10000	Lusitania (of Portugal) [S.E.]	2 0 0	1 1/2	—	1 0 0	0 2 0—July 1864
9276	New Wildberg (copper)	2 0 0	—	—	0 10 0	0 10 0—Aug. 1864
10000	Pontbagnat (sil.-lead), France [S.E.]	120 0 0	—	—	2 3 0	0 15 0—Dec. 1864
97000	Port Phillip (gold), Clunes [S.E.]	1 0 0	1 1/2	1 1/2	0 12 6	0 1 0—July 1864
11000	St. John del Rey [L.] [S.E.]	15 0 0	36	33 35	63 15 0	0 2 0—July 1864
43174	Unit. Mexican (sil.), Mexico [S.E.]	28 5 0	—	—	2 19 0	0 3 0—Sept. 1864
10000	Vancouver (coal) [L.] [S.E.]	5 0 0	—	—	0 15 0	0 5 0—Nov. 1864
25000	Victoria (London) Mining Co.	1 0 0	—	—	0 1 0	0 1 0—Aug. 1864
30000	West Canada Mining Company	1 0 0	—	—	0 13 0	0 5 0—June 1864
45000	Yadanaumutana (cop.), S. A. [L.] [S.E.]	8 0 0	—	—	0 5 0	0 5 0—Aug. 1863

## FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last paid.
10000	Altan and Qumangan Uni. (cop.) [L.] [S.E.]	4 10 0	—	—	4 5 0	0 15 0—Nov. 1863
10000	Copio Mining Company, Chili [S.E.]	16 0 0	—	—	6 18 0	0 10 0—Nov. 1862
10000	Gt. Barrier Land, New Guinea [S.E.]	0 0 0	—	—	15 per cent.	—May 1859
10815	Marigata and Min. Ganga [S.E.]	1 0 0	—	—	0 9 6	0 1 6—July 1859

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
35000	Alamillos (lead), Spain [L.] [S.E.]	1 0 0	1 1/2	1 1/2	Sept. 1864
100000	Anglo-Brazilian (gold) [L.] [S.E.]	0 5 0	—	—	Dec. 1863
30000	Bearis Tin Streaming Company [L.] [S.E.]	0 17 6	—	—	Oct. 1863
25000	Capula (silver), Mexico [L.] [S.E.]	1 0 0	3/4	3/4	Feb. 1864
17000	Central Italian (copper) [7000 £ paid]	0 6 0	—	—	Jan. 1859
10000	Copiapó Smelting [L.], Chili	10 0 0	—	—	Fully paid.
75000	Dun Mountain (copper), New Zealand [L.] [S.E.]	1 0 0	—	—	Fully paid.
50000	East del Rey (gold), Brazil [L.] [S.E.]	1 10 0	—	—	Oct. 1864
8000	English and Canadian Mining Company [L.]	5 0 0	—	—	Fully paid.
40000	Fortuna (copper), West Australia [L.]	2 0 0	—	—	Fully paid.
50000	Frontino and Bolivia (gold), New Granada [L.] [S.E.]	0 15 0	—	—	Oct. 1864
90000	Great Northern (copper), South Australia [L.] [S.E.]	3 0 0	—	—	June, 1862
24000	Hindostan (copper), Bengal [L.] [S.E.]	1 0 0	—	—	Fully paid.
4000	Hope Silver-Lead and Copper Mining Co. [L.], Canada	25 0 0	—	—	Fully paid.
10000	Karibita Colliery Company [L.]	1 0 0	—	—	Fully paid.
130000	Lagunazo (sulphur, copper), Portugal [L.]	1 0 0	—	—	Fully paid.
00000	Montes Aures (gold), Brazil [L.] [S.E.]	2 0 0	1 1/2	1 1/2	Fully paid.
50000	Nova Scotia (lead and gold) [L.] [S.E.]	1 0 0	—	—	Nov. 1862
10000	Ota (copper) New Zealand [L.] [S.E.]	0 15 0	—	—	Sept. 1864
15000	Pachuca Silver Mining Company, Mexico [L.] [S.E.]	1 0 0	—	—	June, 1863
50000	Panuelillo (copper) [L.] [S.E.]	3 0 0	—	4 4 1/2	Feb. 1864
4000	Real River (gold and silver), Limited	1 0 0	—	—	Stock.
23000	Quebrada (copper), Venezuela [L.] [S.E.]	6 10 0	3 1/2	3 1/2	Sept. 1864
50000	Rossa Grande (gold), Brazil [L.] [S.E.]	0 5 0	—	—	April, 1864
10000	San Roque (lead), Spain	5 0 0	—	—	Fully paid.
60000	Santa Barbara (gold), Brazil [L.] [S.E.]	0 15 0	—	—	Sept. 1864
130000	Scottish Australian Mining Company [L.] [S.E.]	0 17 6	%	7 1/2 %	Feb. 1864
10000	South Europe Mining Company, Spain [L.] [S.E.]	3 0 0	—	—	May, 1860
12000	Teplitz Colliery Co., Bohemia [L.] [S.E.]	3 0 0	—	—	June, 1863
5000	Valdormest Mining Company [L.] [S.E.]	10 0 0	—	—	Oct. 1864
40000	Vanderbilt (copper), Italy [L.] [S.E.]	0 10 0	1 1/2	1 1/2 1 1/2	Fully paid.
45000	Victor Emanuel (copper), Italy [L.] [S.E.]	0 0 0	—	—	Fully paid.
1000	Western Africa Malachite (copper) [L.]	110 0 0	—	—	Oct. 1862
12000	Wheal Ellen (copper), South Australia [L.] [S.E.]	2 0 0	—	—	Fully paid.
95000	Worthing (copper), South Australia [L.] [S.E.]	1 0 0	%	3 1/2 %	Fully paid.
75000	Yorke Peninsula, South Australia [L.] [S.E.]	1 0 0	—	—	Fully paid.